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ABSTRACT

As suggested by a Colorado Academic Library Master Plan developed in 1982, a statewide conference that brought together academicians and librarians was held to explore the role of academic libraries in the information society. People came in teams of three from institutions and included library directors, academic vice presidents, and faculty leaders. This report contains seven papers that were presented at the conference: (1) "Not Cassandra, Pandora, or Polonius: Or, Aspects of Learning in American History" (Harold M. Hyman, Rice University); (2) "The Microcomputer Revolution and the New Role of the Library: From the Perspective of a University President/Chancellor" (Alan Guskin, University of Wisconsin at Parkside); (3) "What a College Administrator Expects of an Academic Library" (Robert A. Plane, Clarkson College of Technology); (4) "Raising Levels of Astonishment: Criteria for Academic Library Leadership" (Robert C. Spencer, Sangamon State University); (5) "Confessions of a Former Scenic Designer" (Richard Knaub, University of Colorado at Boulder); (6) "How the Library Helps Me as a Teacher and Researcher" (Paul A. Lacey, Earlham College); and (7) "Using the Library to Teach History at the United States Air Force Academy" (Carl W. Reddell, U.S. Air Force Academy). Background information on the conference and a definition of information literacy introduce the papers. (THC)

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A Colorado Response to the Information Society:

THE CHANGING ACADEMIC LIBRARY

October 6-7, 1983
Denver, Colorado

Edited by Dr. Patricia Senn Breivik

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A Colorado Response to the Information Society
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University of Colorado at Denver

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A Colorado Response to the Information Society:
THE CHANGING ACADEMIC LIBRARY

CONFERENCE BACKGROUND

Given Colorado's status as a bellweather state, it is perhaps not surprising that it has taken the leadership in exploring the potential role of academic libraries in support of higher education goals in the Information Society. In most states, the general response in higher education to the existence of the Information Society were computer literacy requirements, which in most cases meant computer programming courses. Little or no attention was said then nor in the more recent onslaught of publications regarding quality issues to libraries.

In the spring of 1980 the Colorado Commission on Higher Education (CCHE) observed that academic libraries were not included in the current Colorado Higher Education Master Plan. Subsequently, CCHE took the initiative in requesting the development of an academic library master plan for Colorado. At a meeting which included representatives of the Colorado Commission on Higher Education, the State Department of Education, and the Colorado Library Association, membership to provide a balanced representation by size, type, and geographical location of academic libraries was determined. It was agreed the purpose of the academic library master plan was to assess current strengths and weaknesses of academic libraries in the State, and to project the potential roles of academic libraries in support of higher education in Colorado.

Within two years a Colorado Academic Library Master Plan, which includes consideration of both the public and private sectors, was completed. Containing 68 recommendations, it was endorsed by a wide variety of higher education and library organizations in the state. The plan in and of itself was quite an accomplishment. Only the state of New Jersey had produced one earlier; and unlike the latter, the Colorado plan set target dates for most of the recommendations and assigned responsibilities to particular groups. Within two years so many of the objectives had been accomplished, a new edition was required and work continues under the auspices of a Colorado Academic Library Committee.

In the first Master Plan, one recommendation was to hold a statewide conference to bring together academicians and librarians to explore the role of academic libraries in the information society. The conference was held in October of 1983 and was entitled, "The Colorado Response to the Information Society: THE CHANGING ACADEMIC LIBRARY". People came in teams of three from institutions and included the library director, the academic vice president, and a faculty leader. All of the speakers were academic administrators or faculty members who had come to make more than normal use of academic libraries in their institutions. It was an exciting conference and one that generated much interest on the part of the academicians.

Subsequently the Consortium of State Colleges made enrichment funds available for a conference at Western State College on the topic of business programs and libraries, and a year later it provided enrichment funds for a program on behavioral sciences and libraries at Adams State College. Further enrichment funds were allocated, and plans are now underway to have a conference in June of 1986 on the natural sciences and libraries at Metropolitan State College in Denver.

As word of the orginal conference filtered out to other states and as more institutions began exploring ways of promoting quality undergraduate learning experiences, requests for the conference papers started arriving in Colorado. Placing these papers in the ERIC System is a Colorado gift for those seeking to make more effective use of library resources and service in their search for excellence.

Related efforts in the State have lead to the development of a working definition of information literacy, which was reviewed at a national meeting of the American Library Association in Chicago in January of 1986. This definition which appears on the next page, will be particularly useful if the Legislative charge to CCHE to have campuses develop "statements of expected student outcome" is perused. It is also proving useful to individual campuses which are considering the establishment of core curricula or competency levels.

Patricia Senn Breivik
Director, Auraria Library
March, 1986

DEFINITION OF INFORMATION LITERACY

Information literacy is the ability to obtain and evaluate information effectively for a given need.

Defining Characteristics

Information Literacy is:

* an integrated set of skills and knowledge

  skills (research strategy, evaluation)

  knowledge of tools and resources

* developed through acquisition of attitudes

  persistence in research

  attention to detail

  caution in accepting the printed word and single sources of information

* time and labor intensive

* need-driven (a problem-solving activity)

* resistant to changes in resources and technology

* distant but relevant to "literacy" and "computer literacy"

Information Literacy is not:

* (only) knowledge of resources

* library dependent (as sole source of information)

* information finding (it is understanding and evaluating)

NOT CASSANDRA, PANDORA, OR POLONIUS: OR, ASPECTS OF LEARNING IN AMERICAN HISTORY

Dr. Harold M. Hyman, William P. Hobby, Professor of History
Rice University, Houston, Texas

I come, not as a Cassandra with foretales of evils, not as a Pandora with diasters in my box, and not as a Polonius with wise precepts for kings (or for their moderm campus analogs, academic administrators, legislators, and/or trustees). I come instead as a historian.

History, the poet W. H. Auden asserted perceptively, is the "...madonna of silences/To whom we turn/When we have lost control." But even firm believers in the relevance and value of the past to offer guidance in the present and future, sometimes waver.

As example, in December 1862 Abraham Lincoln advised his countrymen that "The dogmas of the quiet past are inadequate for the stormy present."[1] Lincoln's rejection of History is understandable. We know now from the insight that hindsight permits, that as 1862 closed the Union's military fortunes were at their lowest ebb. No light shone at the end of the Civil War tunnel. All alternative public policies hinged on the outcomes of battles. Possibilities for a continental rollback of the Condeferacy seemed minute. Instead American society and Federal government appeared to be destined for permanent Balkanization and the perpetualization of slavery.

Even so, Lincoln's abandonment of history as a guide to perplexed patriots, though it proved to be both temporary and brief, surprises. For this largely self-educated provincial lawyer-politician was as history-minded as the most sophisticated Phi Beta Kappa-keyed Virginia dynast or Columbia and Harvard alumni among the "Imperial" Presidents.

Lincoln's temporary "defection" from history-minded ranks, though surprising, is for me at least, more comprehensible than the fact that today a notion is widespread and growing among academics that the past has little to say to present needs or to future possibilities. Consider law scholars, as example, a group with which I have had especially extended recent acquaintance. So called "Critical Legal Realists" proclaim as a self-evident truth requiring little or no factual corroboration from research, that history is irrelevant to jurisprudente, or to much else. Analogous judgements issue from spokesman for several social science disciplines, especially from persons of so-called "New Left" opinions. In 1982 legal philosopher Michael Perry suggested that old chestnuts among research topics, including that most elusive one in jurisprudence and constitutional history, the intentions of the framers of the Constitution of 1787, be discarded as unrecapturable. "I prefer to let the framers sleep," Perry concluded.[2]

Such doubts as Perry's about the value of library and archival research on a once-sacred subject such as the framer's intentions, is not heresy. But is it anything more than hearsay? Whatever the merits of their criticisms of traditional history research, Perry and other Critical Legal Realists will, I suggest, remain mere carpers until they provide methods of research that are superior to history's, by which today's hot potatoes such as abortions, gun control, or war powers can be judged. Our ongoing, uncertain task in this federal system of divided branches and shared functions, expressed in a constitutional structure of both limitations and authorities, is, in my judgment, to decide if and now perceptions of 1787 about what were hot potatoes then, speak to our concerns. Again to exploit the poet Auden, History is she into whose eyes "...we look for recognition/After we have been found out."

* * * * *

Universities, libraries, and archives have been, are, and will be central to this effort to find out. They are the places where the tools of knowledge are conceived, forged, and used; the places where Auden's "recognition" phenomenon has most often occurred.

Such critics as Perry do raise a central question. It is: if certain traditional phenomena about which we have clustered whole divisions of teaching facilities and research tools in universities and libraries are essentially incomprehensible and not worth pursuing, then is the existing organization of knowledge defensible? If answers to such bedrock topics as the intentions of the Constitution's framers are no longer worth energy or funds to pursue because finding out is alleged to be impossible, then disturbing implications do indeed exist for the processes of constitutionalism that help to make democratic, federal society operable. More immediately, such judgments as Perry's pose large and unsettling problems for all library-bound researchers and for the university and foundation officials and librarians who create the environments and house the tools for research and thought.

But these problems are not those of irrelevance or obsolescence, as charged. Such critics as Perry are wrong, I think, or at least have not proved themselves to be correct about the failure of the existing organization of knowledge. Our present ways want improvement, not the scrap-heap.

In order to substantiate my position and to build a perspective on our situation, I offer today a two-step paper. Step I concerns a theme central in American history since 1785, one that is perculiarly relevant also to our present concerns. This theme is: access to learning as the peculiarly American agenda. With respect to learning, I shall suggest that access (a word embraced recently under more fashionable labels such as social

mobility or opportunity) has meant, traditionally, access to formal education and to accumulated knowledge. Access has also meant a realistic promise of ability to own, rent, or otherwise have the use of adequate property, traditionally land, for economic sufficiency. Last, access has also meant the availability of actual, not merely theoretical legal rights with which to protect both the openness of entry to education and knowledge, and the safety of title to land or other propety as well as of one's person.[3]

To build Step I's overall theme of access, I will try to connect certain public policies of Thomas Jefferson's, Lincoln's, and Franklin Roosevelt's White House years. These three, more than any other chief Executives, greatly widened the access of masses of relatively ordinary Americans to learning, land, and law.

Step II will look at our present situation in terms of access, especially with respect to implications of new computerized technologies concerning knowledge, economic opportunity, and legal rights, especially on campuses, and most especially concerning libraries.

* * * * *

Now, to Step I, the survey of access to the tools of learning, land, and law in the histories of three Presidents. Jefferson, the first of my illustrious trio, like Lincoln and Roosevelt, endlessly fascinates and puzzles historians. That this slaveowning Virginia elitist should also create the Declaration of Independence is both a fact and a paradox.

Some of the many contradictory elements in Jefferson's life are at least containable if not explainable by the fact that he lived both in a perid known as "The Enlightenment" and was a leading contributor to its enlightening characteristics.

The Enlightenment was an astonishingly fashionable attitude toward man, knowledge, time, progress, nature, and morality, common among educated persons in Western Europe and its colonial offshoots in the 17th and 18th centuries. It was elitist in its participants yet democratic in results, at least in America. Enlightenment attitudes had their unlikly origins in perceptions and misperceptions that spun off from Newtonian physics, spinoffs that included these: that all phenomena obeyed orderly natural laws and were not supernatural or capricious; that man through the use of his reason and by the systematic arrangement and retrieval of knowledge as in encyclopedias and catalogs, could discern and apply these natural laws; that human progress was the essential lesson taught by history; and that one measure of progress was the body of legal rights individuals possessed against both other individuals and arbitrary government. Jefferson's formulation in the Declaration of Independence, "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their creator with certain unalienable rights," is a perfect expression of Enlightenment aspirations and assumptions that "life, liberty, and the pursuit of happiness [i.e., property] were preeminent among natural rights.

Jefferson's "Declaration" became the wedge for a controlled revolution against arbitrary public power; the American Revolution was the Enlightenment in fact not theory. Thereafter, America , with all its sexist and racial barriers to equal access became, as Henry Steele Commager expressed it, an "empire of reason" compared to other societies. Europeans, Commager continued, "imagined" the Enlightenment. Americans realized it, Commager concluded.[4]

Years before his presidency, Jefferson, then a congressman under the Articles of Confederation, helped to make possible the eventual continent-wide perception of a right of individuals to enjoy access to education, land, and legal protection. He was chief author of the famous Northwest Ordinance of 1787. Then, as President, in 1803 he contrived the Louisiana Purchase. Taken together, the Northwest Ordinance on the northern hand and the Louisiana Purchase on the southern, opened for generations of (white) Americans the promise of access to relatively cheap land.

As a carryover from Europe, Americans looked on land as the primary source of all other wealth and on land ownership as the primary prerequisite for all legal and political rights, especially those of state citizenship (i.e., the ballot, jury duty, militia service, etc.). The possession of legal rights to defend that ownership of land of that "real" estate we still call it, or to sell, will, or divide the land as the owner wished, was a primary benefit of being a free and equal American. The diffusion of access to land, and to rights deriving from land, during and after Jefferson's lifetime was what promoted Goethe to say of this nation, "Amerika, du haster besser," and Tocqueville to describe and American as that "new man" in the world.

Jefferson broadened this diffusion of the right of access, especially in the Northwest Ordinance. It stipulated that slavery could not exist in that vast expanse of land north of the Ohio River to the Mississippi while it was a federal territory, or in the states to be made from this federal possession. Further, attendant legislation to the Ordinance reserved a sizable portion of the proceeds of the sale of the Old Northwest's public lands to actual settlers (homesteaders) for the support of education.

By contrast, the Louisiana Purchase, though it did indeed allow enormous--to Europeans, incredible--access to seemingly endless cheap land, never inspired a similar commitment of public resources to education. The ill-defined boundaries of the Louisiana Territory abutted to the East on slaveowning states. Mass education as a popular right or even aspiration, died where slavery existed or might exist.

The question of slavery in the Federal Territories (future states) of the Louisiana Purchase touched off a frightening policy debate in 1819 in Congress, one that Jefferson likened to a firebell in the night. The first result of the 1819 debate was the miscalled "Compromise of 1820"--a

sectional sellout to the South in my view. The Compromise was a foretaste of the political role that a view of race as an eternal test of status and access was to play. This role reached its climax at Fort Sumter and Appomattox.

*****

Lincoln was to make the substance of Jefferson's Northwest Ordinance innovation a far greater and more common part of the living American heritage. No greater contrasts are imaginable than between Jefferson, the sophisticated slaveholding equalitarian esthete of the Old Dominion, and Lincoln, a largely self-educated provincial workaday lawyer from the tall-corn-and-big-pig flatlands of Illinois, a state created out of Jefferson's Northwest Ordinance. Born in 1809, Lincoln grew to maturity while Jefferson still lived. The Illinoisan bore as part of his cultural baggage essentially Enlightenment notions about universal human perfectibility though many of Lincoln's generation had reservations on this score so far as blacks, Mormons, Indians, Jews, Catholics, Latins, and women were concerned, Lincoln, unlike many of his contemporaries, was able to grow out of gross prejudices. Respect for education, economic opportunity, and legal rights became Lincoln's trinity in his dual careers as politician and lawyer.

Lincoln's daily law practice kept him and all practicing attorneys scrambling to keep up with avalanching changes in private law, especially of contract. These changes profoundly affected the capacity of Americans to enjoy access to, and to function in, the economic arenas where they could fight for property. In brief, these changes greatly enlarged the idea, already growing while Jefferson practiced law, of each individual's personal responsibility for every contract he made independent of his status. In the new contract law, every party to a buy-and-sell agreement, as example, had to protect his own interests by being responsible for whatever standard of quality, price, or delivery he wished to include--"caveat emptor" we call it. Every free American could bargain and contract unrestrainedly for whatever returns his labor, produce, or materials might command; every free man had remedies for the violation of a contract in form of lawsuits in which he could as a testify and witness; every free man had a right to be mobile in search of those with whom to contract at his own risk. Litigation, Tocqueville remarked, was on its way to becoming Americans' favorite indoor sport.

This changing concept of contract law stressed the legal equality of all contractors with one another; equality to risk, to labor, to gain or lose. One's basic civil right was to have equal access to this trackless economic arena. White men had access, not as a theoretical right but as common fact. Save to provide legal remedies in form of institutions of contract enforcement such as courts and police, states played only minor roles.

The recurring political crises 1819-1860, as Lincoln matured and entered law and policies, over the return of runaway slaves across state lines,

illustrate the centrality of this idea of access and its connections to questions of contract. In slave states, contract law developed differently from what was occurring in non-slave states. Slave state law excluded a fixed hereditary status, in short, automatically denying those in that status any rights, remedies, or responsibilities. Slave law contradicted every Enlightenment assumption about the perfectibility of all men through access to rationally ordered retrievable knowledge and about the equal capability of every economic actor to contract. No slave state through the 1850's created tax-supported school systems. Instead in every slave state it became a felony to teach a slave to read and write even the Bible, a policy which offended even Negrophobe Christians in non-slave states.

It also offended Victorians that every slave baby was a bastard. Marriage was a civil contract. No slave could contract. It was offensive as well that slave labor drove out free labor every where the two co-existed. Such anomalies spawned the other historic "compromises"--those of 1850 and 1854.

Slaves who, at terrible hazards, exercised mobility by fleeing from masters — "voting with their feet," abolitionists called it — spawned the dramatic fugitive slave rescues and recaptures that illuminated the realities of slavery to northern inhabitants who might not otherwise ever see a Negro. Southerners, disregarding their own pet state rights political tactic, since 1820 insisted on increasingly — rigorous federal enforcements of fugitive slave recapture laws in states, laws without due process for alleged fugitives or their abettors. In 1850 Congress, at southern dictation, established a national police force for this purpose. So doing, the laws of slave staterightists had centralized the federal Union, and then, in 1861, tried to destory it in order to perpetualize rights to slave property.

Secessions of the South's states followed Lincoln's election, secession being, in effect, a constitutionalism of "If I can't get my way I won't play." War came, bringing us back to Lincoln's brief lapse of December 1862 into a historicism with which I began this essay.

*****

From 1863 through early 1865, as Union Army fortunes improved, Lincoln and his party became social engineers on scales Jefferson never neared. In executive proclamations on military emancipation and state reconstructions; in wartime statutes on property confiscation, the draft, and internal security; in a 13th Amendment abolishing slave property in every state, and in a Freedmen's Bureau (the first modern adnimistrative commission), the Lincoln administration, by making the nurture of equal rights and status of all Americans a national duty, altered American society in ways unimaginable had there been no war.

On the non-military side, the Lincolnians also expanded and institutionalized Jeffersonian ideas on access of all free men — and, once the bluecoats won, all Americans were free and, theoretically, with respect to equal education, land, and law. In the 1862 Morrill law, the nation authorized every state with federal lands in its borders, to sell them and use the money to develop tax-supported institutions of higher learning. Out of this globally pioneering arrangement came the great land-grant colleges

and universities with their splendid libraries and their tradition of being social mobility ladders for generations. Until recently, WASPS benefitted most from these provisions, but access has been virtually universalized especially since 1945 and 1954, as we shall see.

Similarly, the 1862 Homestead Law repeated, for a vastly larger acreage than the Northwest Ordinance, commitments to the availability of cheap land for actual settlers. A federal subsidy for transcontinental railroad-building promised to make that land valuable through improved communications. A linked measure created sketchy but improved federal minima for state-chartered private banks. The result was greater security for property.

In 1865, the year of Appomattox, Congress created, in addition to the Freedmen's Bureau, the 13th Amendment, and in early 1866, the world's first Civil Rights law, to enforce that Amendment. All opened federal courts for state citizens of all races when state justice was racially prejudiced, especially in contract matters.

Jefferson would have been delighted by this Lincolnian 19th Century Enlightenment that Union troopers, white and black, made possible. Progress seemed to be inevitable now that slavery's irrationalities were erased. National professions, including those in economics, education, history, law, librarianship, and social science, established themselves soon after Appomattox. American farms, factories, and schools became models for an envious world. Millions of immigrants flocked here from Europe to this "Great Transatlantic Workshop" and to take up cheap land in this stable yet open society. Learning, land, and law were magnets.

On small but accelerating scales, the post-Civil War colleges and universities of both the older private and state-subsidized forms in the East and the publicly-supported land-grant mode elsewhere, also transformed themselves. Their libraries, especially in the new reseach-focused universities, whether following the knowledge-retrieval systems of Cutter, Dewey, or Langdell, eased the paper chases that researchers faced because of the outpouring publications of the young professional societies and of the research disciplines and applied pedagogies then coming into being out of Darwinian rather than Newtonian perceptions. By the century's turn, when Theodore Roosevelt was in the White House and Woodrow Wilson was president of Princeton, the new learning was being rather reluctantly absorbed by Roosevelt's young nephew, Franklin D. Roosevelt.

* * * * * * * *

Roosevelt, like Jefferson as much an aristocrat as America is possible of producing, attended Ivy League schools in an Edwardian atmosphere that smiled on the "gentleman's C" grades he received and that still valued college libraries more as safes for books than laboratories for learning or research. This atmosphere is suggested by the anecdote President Hadley of Yale told of his early years there. One of Yale's most distinguished faculty, a professor of the "old school," who spent his independent wealth on books for his own research and used the Yale Library rarely, told Hadley:

"I conceive that the chief educational use of a university library is to lend an occasional book to a professor who does not happen to have the book in his own library."[5]

Changes, already alluded to, impended in higher educaion whether in the Ivy League where Franklin Roosevelt was matriculating, the newer federal or state tax-supported universities, or the universities and libraries that were sprouting from private benefactions of philanthropists such as Carnegie, Duke, and Stanford. Leaving FDR to mature, I propose that we attend now to some of these significant changes.

In the 1910-1960 decades, predictions became common from pedagogues and librarians, that new technologies of data-management and communication involving, in their turn, the cross-indexed card catalog, then the telephone, radio, motion pictures, document photo-reproduction, television, and microforms would revolutionize the ways of intellectual work. Of these innovations, the least mechanical, the card catalog, has probably been the most significant. Some commentators of the 1920s likened it, indeed, to a basic transformation in knowledge-retrieval in terms as excited as apostles of computerized techniques used today. The card catalog was another Declaraton of Independence or 13th Amendment. It opened a "new era" of learning, making possible centralized research libraries. The "great centralized" card catalog, Charles Martel (honest!) of the Library of Congress wrote in 1926, answered all conceivable research needs. Teaching and research could unite. All libraries and all their users would escalate onto new, higher plateaus of information that would be masterable because it was retrievable.[6]

Pro-card librarians 60 years ago congratulated themselves, specialized researchers, general users, and the entire American society, on the card catalog, this "purely American method of placing the lore of all the ages at the command of all the people."[7]

Another pro-card writer complained, however, that too many young users of her cherished catalog did not know the alphabet. "The fundamentals," she charged, were "no longer taught in schools." But she saw relief. The new communications offered by the radio and telephone in the 1920s might substitute oral instructions for printed cards in catalogs and thus relieve even the unlettered from the consequences of this disability.[8]

In this excited spirit, writers of the 1920-60 decades predicted, sometimes with footnotes, that the standardized card catalog, plus wired or wireless communicatons would make fixed-site libraries and universities--indeed, all fixed-site schools—obsolete. Americans would learn at home, on the job, or even in their automobiles. Correspondence and extension courses--"lifelong" or "adult" learning became the more popular label--would be cheap and ubiquitous. No research library or archive would monopolize its holdings any longer. Instead everything in every library and archive would become available to everyone everywhere through microfilm or other microform, xeroxing, or interlibrary loan.

None of these fancies has become fact. Yet all these innovations of

technology certainly affected research and teaching. Except for the searching changes wrought by the card catalog, until the late 1970s and early 1980s libraries and universities, however grown in size, centralized in their reference and acquisitions operations, and improved in quality of both teaching and research, were remarkably similar to their forebears of the 1920s. The reports of their obsolenscence and deaths were exaggerated by clouded-crystal-ball throwers.

* * * * * * * *

Now back to Franklin Roosevelt. Like Jefferson, he greatly expanded the practices of pluralistic politics and economic democracy. Like Lincoln, Roosevelt became President at a time when the values of a democratic Federal Union were up for grabs. Only foolhardy prophets would have suggested publicly in 1933 that the Great Depression could involve the nation's and states' governments in significant efforts to widen access to learning, land, and law, or, in the next decade, that World War II would result in even greater commitments to vastly enlarged access. The "Roosevelt Revolution" is, in my opinion, represented best by this "access revolution."

During the Depression, federal and state New Deal programs encouraged farm and home ownership as well as work relief. Bank deposits received insurance protection. Programs aimed at keeping youths in schools allowed students to earn pittances for services to libraries—services the products of which researchers bless today. From the National Archives and the Library of Congress at the top to numerous local historical societies and libraries, priceless archival collections and improved library holdings and retrieval procedures were encouraged. Approaches, however timid and incomplete by later measures, were initiated by the federal government and some states in direction of greater race equality in the procedures of these and other recovery and relief programs.

In 1945, with military victory at hand, the Roosevelt-Truman administrations sponsored the greatest leap forward in American aspirations since emancipation. As never before in the history of nations, access to learning, land, and the law became available to truly substantial portions of a population.

The major revolutionary vehicles were the GI Bill of 1945, attendant home-and-business loan guarantee programs for war veterans and many non-veterans as well, plus carryover New Deal laws. These statutes opened for millions, access to education even through graduate and professional schools and to urban, suburban, and rural housing. Companion statutes, judicial decisions, and administrative decisions expanded greatly the meaningfulness of legal remedies to make access to learning and land more available and better protected.

By 1950 entire new university and library systems were altering the American landscape. As consequence of the GI Bill and of changing standards of equity, these systems could no longer staff themselves as before World War II, almost exclusively with male WASP alumni especially of the Ivy League. Instead, tenacious ethnic and religious prejudicial barriers against access to career ladders in the learning industry, collapsed like the rotten wood

they were.

Then, in 1954, the Supreme Court's Brown v. Board of Education extended to blacks the benefits of access to this revolution. Since then, by legal right, racial, ethnic, and gender barriers have also collapsed, at least partially. Exclusion by race, religion, or gender is no longer a defensible option in numberous access situations, no longer, that is, if American constitutionalism and general history of the sort I surveyed in Step I of this paper. Now to Step II.

* * * * * * * *

A possibility exists in the new "learning revolution" that is upon us for the choking off of this ennobling history of widening access. Electronic technology applied to education generally, and to data retrieval particularly, have, some worried commentators suggest, already begun the choking. If constricted, the avenues of access will produce a favored elite and a far more numerous "have not" and "can't get" class riveted into a menial and increasingly unemployable status. Such a two-tiered educational structure, of a pattern common abroad, has enormous social implications. If computer proficiency applied to access is to be the test of status, as religion or race once were, then America's future will be wrenched from its path of progress.

The genius of Jefferson, Lincoln, and Roosevelt, among many others, in extending access to learning, land, and law to widening segments of the general population, helped greatly to emasculate appeals to class ideologies here. This history of growing access of the justification for pride in America's past and hope for its future. It is the present that is at stake.

The basic premise of access is that an effective citizenry possesses and exercises the skills needed to acquire and handle information. An effective professoriat has both the responsibility to be both effective citizens and specialists in the retrieval of data for their research and teaching. Let us descend, therefore, from the lofty, ominous cloud of electronics and the American present, especially for campus inhabitants and those who support them financially.

I have no doubt that a revolution in the retrieval of data has begun via the computer. Still the sprawling masses of disparate data that many humanists need to use has only rarely been programmed, and that very partially. Some suggest that these masses are very unlikely to be programmed in our lifetimes. Therefore the significance of this revolution is minimized by very significant commentators among historians. "Homo-Up-To-Datum is a Dunce," Daniel Boorstin, the Librarian of Congress and a distinguished historian, informed Reader's Digest readers in September 1982. But I note that the Library of Congress is computerizing itself during Boorstin's reign there. Other front runners in historical scholarship such as Walter Johnson praise the "increased openness" that characterizes research during the past thirty years. Increasingly centralized finding aids, including computers, should be seen as benign aids to research. The data base is a historian's friend not enemy, Johnson wrote in the Newsletter of the Organization of American Historians in May 1983:

> The "new" social and urban history, and more recently, the emphasis on quantification in history, speeded enormously by computers, made clear in my years of teaching and research that as we grope for a better understanding of the past we cannot afford to reject an approach any more than we can claim that one approach can solve all the mysteries of the past.

As runaway slaves once voted with their feet about freedom, now historians are voting with their pocketbooks about computers. They are buying word processors. Historians who were loudest in their adoration of quill-pen research techniques as equivalents of principle if not of chastity, now reveal the glow of monitor screens when they open office doors. Corridor chatter used to revolve around basic matters such as salaries and parking. Now conversation is concerned with the violent, sexy jargon of computerese: with bytes and crashes.

Professional umbrella journals such as the Chronicle of Higher Educationin almost every recent number carry expressions of contrary views, sometimes passionate, about "computer mania." Reports proliferate of huge grants by such interested donors as IBM to MIT to create new computer-based curricula in the liberal arts; reports that breed jealousy among non-grantees in this money-hungry time. The American Chemical society offers the full texts of scholarly journals in its discipline by computer. Arkansas intends to link electronically all its elementary and high school classrooms thus to make "master teachers" available to pupils in the state's most remote hamlet. College after college is pondering or initiating some plan to require computer literacy of freshman applicants for admission. Paul Starr, a historian who masquerades as a sociologist, acknowledged in his recent The Social Transformation of American Medicine (1983) that "This book was written in the old-fashioned way: The lone scholar pecking away at his word processor."[9]

Does all this remind you of the predictions about the revolutionary effects on research and teaching the the 1920--1960 decades, of the telephone, radio, and TV? Perhaps so. Nevertheless, the computer, like the card catalog, is revolutonary. The very instruction manual of my word processor, a now-antique Kapro, effuses on these matters:

> We are at the dawn of an historic revolution, equivalent in scope to the Industrial Revolution of the 19th century. In the Industrial Revolution, human beings were able to harness, through the application of scientific laws, vast new resources of power for industrial applications. In the...computer revolution, human beings are again harnessing power...the power of artificial memory and intelligence. As...Joseph Deken writes: Human beings would find it useless to compete in raw muscle power with tractors...; it is equally futile to

compete in raw memory power with a bank of video disks.[10]

Computers will, their champions claim, free research scholars for creative analysis and expression. For myself, I am excited by being able to survey, via computers, larger finding aids and data bases than ever before. But I am learning that preconditions exist to such enhanced openness.

The first condition is that I, the researcher, must trouble to familiarize myself with basic techniques of computerland if I am fully to exploit even the sparse patches of relevant humanistic data that is there. Second, I must associate with knowledgeable librarians if I am to be able to locate the most exploitable data bases; indeed, if I am even to keep current with the swiftly growing number of programs relevant to my research. Third, I must keep using also every traditional finding aid and homely, intuitive, stroll-through-the-stacks research "technique." No computerized retrieval program replaces my capacity to link the contents of disparate writings in my brain.

Looking at computer implications, it is reasonable to be antagonistic or enthusiastic. Obviously I prefer to be a mugwump (a bird which straddles all fences, his mug on one side and his wump on the other). I have a word processor and seek to penetrate its arcane mysteries. But I have, as noted, abandoned not one of the traditional research techniques I developed, used, and taught during the past third-of-a-century. I am as thrilled by the recent (1983) publication in book form of the U.S. Senate Historian's printed Guide to Research Collections of Former United State Senators, 1789-1982 as I am at the availability on my computer of all U.S. Supreme Court decisions back to 1792.

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The point is that I want more of both. I want, and desperately need librarians who comprehend both kinds of research aids. Neither historians nor librarians are obsolete. Professional life is more than computers. It is also change.

As example of change, major labraries and archives are still centralizing; others, dispersing. On the centralizing side, we are all familiar with the trend toward concentrating the research resources of a state university system in a flagship campus. Contrarywise, in Lewis Caroll's word, such centers as Presidential libraries are centrifugal in effects on research.

In light of centralized research facilities, university presidents and deans ask historians why research travel to so many scattered places is still so often needed. I reply to parsimonious presidents and deans that travel of this sort is essential and will remain so as far as I can foresee, whatever electronic network emerges to tie some libraries together. No historian worthy of the name will assume that any cataloger's subject cluster or any programmed data will include what he seeks; that any librarian, no matter how devoted, indefatigable, and assiduous, can (or should) equal his own mastery of data. If librarians did what historians should do then their tasks would be interchangable. They are not.

Historical research will always be an intensely personal, hands-on experience, more intimate perhaps than any other human encounter save one. Odds are that this lust for intimacy in research will prevail also among most other humanists, fine artists, and a number of social scientists for whom libraries remain laboratories.

Another problem faces library-bound researchers, librarians, education administators, legislators, and trustees. It is that non-library-focussed academics, especially in the applied sciences and professional schools who live primarily off recent periodicals not books, are, I believe, growing in number and influence. Computer networks serve non-book users far better than those who are still people of the book. Campus politics and budget allocations for libraries inevitably will reflect this fact.

Therefore it is not unreal today to ask: can history survive? It is also realistic to inquire: can research libraries live much longer, considering both the computers and avalanching costs? Will taxpayers and donors stand for swelling "cancerous" library budgets? Will mass-data, computerized programs threaten the integrity of existing acquisitions programs for books, periodicals, pamphlets, and manuscripts -- my traditional and essential sources? Which should or must change, libraries or researchers?

Both will, it seems clear. If Humanities Research scholars do not take part in the competition to shape library collections and to allocate library funds, others will do the collections designing and make the budget decisions.

For example, I suppose that librarians face already the need to decide which software programs in several areas of learning and teaching should be part of the permanent research collection of their institution. I should hate to grumble later that I was not a vigorous participant in this policy-making arena, one that will so fundamentally shape our research worlds in coming decades.

This example leads me to my general response to the suggestion that both libraries as research centers and humanists, as research scholars worth supporting, are obsolete or irrelevant. My response, cleansed of obscenities, is: FIGHT BACK!!! With respect to my own field, history, I have been allying myself and my PhD students to where the power and funds are in my university and region—in business, technology, law, and medicine. I sponsor dissertation research in the histories of these too-long neglected regions, research sometimes supported financially by the subjects of research in open-records, hands-off, no-censorship contractual arrangements. I want, in short, to captivate the "enemy." And at the same time I hope to encourage impeccable scholarly research and writing where they are sorely needed.

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As a researcher, I know that most of my colleagues and I are like boot-camp veterans, in that we want our students to endure what we suffered. Thus far, I have survived many technological innovations during the past

far, I have survived many technological innovations during the past third-of-a-century. One by one, I used the key-sorter, the Contura portable copier, interlibrary loan, microfilm and the whole "micro" family. I have blessed the recent availability of unprecedentedly detailed, systematic, and uniform printed guides to libraries and archives. I am not afraid of machines, though I understand the workings of few. I know from History that Luddites--machine-breakers--have never won. Back-to-rural-virtues movements such as those of the Englishman William Morris at the end of the 1800s, of Ghandi in the 1950s, and of American commune dwellers of the 1960s, have faded. I am one with Frank Lloyd Wright who, in his 1901 lecture on "The Art and Craft of the Machine," abandoned his earlier flirtation with cottage industry. The machine was not the enemy of learning or art; its abuse was, Wright argued. "The machine," Wright said, "is here to stay. It is the forerunner of the democracy that is our dearest hope."[11]

The research potentialities and the implications for greater access before us are indeed hopeful. We are in a new post-Sputnik phase. Adjustments by librarians, administrators, legislators, and trustees, as well as by research scholars, are in order. What should these adjustments be? Vast increases in cooperation, in the sharing of holdings, and in the systematic, uninterruped acquisitions of great printed and raw data sources, seem to be in the cards. I want -- I need -- the library to make available to me all I can know. Short of that I cannot grow, and therefore could have no right to teach undergraduates, much less would-be PhDs and post PhDs.

We do not need over-hasty prejudgments about the perils of co-habitation with computer technology. What is needed is a commitment frequently to reassemble, to reevaluate, and, above all, to <u>think</u> about the links binding past, present, and future. If we fall into competing and antagonistic factions then the real game, scholarship, is the predictable casualty. But in some form of community of acknowledged interests and concerns, we can, I hope, bequeath the essential meaning of access to learning, to opportunity, and to defendable rights, to those who follow us. Libraries, librarians, and their dependents, the researchers, teachers, and students, have ongoing and primary roles in the age of electronics. If a paperless society is in the offing, it is unlikely to be bookless; it certainly will not be information-less.[12]

The important year for us all is not 1984 but 1999. As we approach the 21st century it seems clear to me that none of us--not research scholars, computer technologists, librarians, or university administrators--can presently be dogmatic about future research and teaching shores, the contours of which we see so dimly if at all. What we can know with some confidence is the past, and that only partially.[13]

To me, history suggests that research libraries remain the essential store of knowledge. They will, I believe, continue to perform their functions best as they, first, continue to perfect the non-electronic finding aids and procedures worked out over the past three-quarters-of-a-century or more, often with great pain and effort. Second, in applying new data retrieval modes, research libraries will serve best as librarians work closely with faculty and with producers of new retrieval machinery, under supporting

policies set by administrators and trustees. Closer associaton between all of us will, I suggest in hope and some confidence, help to retain and widen that access to learning, opportunity, and rights which has been, is, and presumably will be connected with hopes for fears of popular democracy or elitism.

Constricted access to learning has, historically, created one or another kind of privileged aristocracy in which disadvantaged or excluded persons and groups enjoyed few chances for improved wealth or defendable legal rights for the security of possessions or persons. Royal Governor William Berkeley of Virginia best expressed the elitist praise of constricted access to learning, 300 years ago: "I thank God, there are no free schools nor printing (in Virginia), and I hope we shall not have these...; for learning had brought disobedience, and heresy, and sects into the world, and printing has divulged them, and libels against the best government. God keep us from both."[14]

Berkeley's prayer did not, apparently, gain divine favor. In English-speaking North America, save in the slaveholding section, democracy and pluralism rather than aristocracy and homogeneity became veritable civil religions in which access to learning, land, and law were touchstones of both freedom and equality.

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To conclude. The real revolution of our time is not technology. The essential revolution is the vision, the aspiration, the motion of a society. Only the knowledge stored in libraries can tell us in non-ideological terms about the clarity of our vision and the appropriateness of our direction. When research scholars exploit their libraries and evaluate us, will we get decent grades on the scale of access to learning, land, and law created in Jefferson's, Lincoln's, and FDR's generations? That's a better scale than those offered by Cassandra, Pandora, or Polonius.

This paper was presented in a modified form at a conference on "A Colorado Response to the Information Society: THE CHANGING ACADEMIC LIBRARY," October 6-7, 1983, Denver, Colorado.

ENDNOTES

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3. See John Berry, Editorial, "America's Access Agenda," 13 LJ (7/83), 1290.

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5. In Samuel Rothstein, "The Context for Reference Service: The Rise of Research and Research Libraries, 1850-1900," in Harris, Reader (1971), n. 50.

6. Martel, "Cataloging, 1876-1926," 51 Library Journal (1926), 1065-8.

7. Julia C. Gray, "The Library Card Catalog," 54, Library Journal (1929), 66-7.

8. Minnie Clark Budlong, in 46 Library Journal (1921), 441.

9. NY Times Book Review (Ap. 9, 1983).

10. Perfect Writer (KAPRO) 2d ed. 1983, p. 7.

11. In Edward Lucie-Smith, The Story of Craft: The Craftsman's Role in Society (1981), 226-7.

12. Larry Besant, in College and Research Libraries (July 1983), 294.

13. See CRL's abstract of proceedings of 1982 conference, "Toward the 21st Century: An Agenda for Research Libraries and their Users." I am grateful to Mr. Warren Haas, president of CRL, fora copy of the abstract.

14. In Don Mabry Lacy, "Libraries and Freedom of Access to Information," in ALA, Libraries and the Life of the Mind in America (1977), 19.

THE MICROCOMPUTER REVOLUTION AND THE NEW ROLE OF THE LIBRARY: FROM THE PERSPECTIVE OF A UNIVERSITY PRESIDENT/CHANCELLOR

Alan Guskin, Chancellor
University of Wisconsin at Parkside

It is indeed a pleasure for me to speak to you as you look at the future of the library. Libraries may be the most important institutions on university campuses; they represent the symbolic core of our intellectual life. And, in an irony that emerges from the technological advances of the last decade, the library is both the conservator of our intellectual heritage and the harbinger of our technological future.

Today I will speak to you about how the revolution in information and communication technology, especially the microcomputer, will affect the future role of the university library. I may be eminently qualified to discuss this topic with you because I am not a librarian and am not a computer expert. Some would say this enables me to be objective. Others would say that Chancellors and Presidents of universities always talk about things of which they are not expert; others would be even less kind. But after eight years as Chancellor, I guess I speak no matter what!

My interest in this topic emanates from my role as an educator and as a chief executive officer of a university who must continually make resource allocations to maintain and enhance the quality of education. The future role of the library may be the most important issue for the present generation of educational leaders if we are to adequately protect the intellectual life of the university for this and future generations of students and faculty.

In this short talk I will not discuss how what I am proposing is being implemented at UW-Parkside. However, if you ask me a question about it, I'd be happy to answer.

University libraries are at a critical crossroads. Pressures emanate from a number of diverse sources; the financial difficulties of universities, the economics of book publishing, the incredible inflationary and other cost increases in periodicals and serials, and the very recent surge in computer technology that is changing the nature of information retrieval and information technology, and which may alter the manner in which materials are published and by which information users gain access to them.

Yet, when we enter a library, we may sense little of this change. There is still a card catalogue, there are still books, serials and periodicals on the shelves, and the librarians themselves look and sound the same. But surface appearances should not mislead us. For if we look deeper, we will probably have difficulty finding some of the newer books we expected to find. We will also find a surprising absence of some journals, particularly some of the more rarely used scientific ones and some of the more popular magazines that can be found in public libraries. Then, we may want to look up one of the common reference works--Chemical Abstracts or Psychological Abstracts--and will not be able to find them. Surprised, we ask the reference librarian if he or she could direct us to the abstracts and are told that for the last year those abstracts are no longer available in hard copy but librarians would be

happy to use a microcomputer, serving as a terminal, to search "on line" for relevant citations.

So begins the long walk into the library of the future and to major changes in this venerable bastion of academic life.

The role of the library as the center of the university has been more symbol than reality for many years. Although it may be physically located at the heart of the campus or symbolically placed there in the words of the college catalogue or even university presidents, the day-to-day reality for libraries and librarians has been much different. On most, if not all campuses, the libraries are discussed at depth when something goes wrong or when the realities of inflation continue to ravage a dwindling materials budget. The library is not a center of policy discussions and librarians are, on the whole, not an influential lot.

I believe this will change given how information is and will be processed and retrieved in the immediate future. While it would have been desirable in the past for the library to be a central concern of academic policy makers, it will be essential in the future for libraries to be such.

I have already alluded to one of the critical issues facing universities which has brought the library front and center; namely, the difficult fiscal situation that all universities are facing. Inflation continues to eat away at the core of the physical facilities and instructional equipment and materials and this is no where more apparent than in university libraries. I do not have to convince any of you of this problem. I will simply state that if we assume a 60:40 ratio of periodicals to books, in order to purchase the same number of books and periodicals in 1981 that was purchased in 1977, the library materials budget would have had to increase by 49% in dollars. A university that spent $500,000 in 1977 would have had to spend $745,000 in 1981 to stay even.

During this same period, many university budgets, excluding salaries, have, at best, been static. The result at many universities which pride themselves on having a good library is that a substantial but inadequate increase has been made in the library materials budget, a decrease has occurred in book purchases, and periodicals and serials have been carefully reviewed, reduced, and replaced in part by the introduction of alternative sources such as computer retrieval systems. Because of fiscal problems and faculty outcry against periodical cuts, the library has become a serious concern of policy makers.

A second critical matter that university policy makers must face that will directly have impact on the library is the microcomputer revolution and the increased demand for computer use. There has been a continuing increase in computer use over the last decade as faculty apply this technology to more and more research areas and as engineering and business schools grow in students and faculty and in use of the new technologies. Much of the increased computer use generally is focused on main frame computers and sophisticated users who, utilizing available computer power, figure out ways to work with their similarly hardware-oriented computer center colleagues to solve their computing needs.

The introduction of microcomputers has significantly altered these patterns; it has changed how people think about computers and how they can be utilized to fill their needs. Now unsophisticated users--that is, people like me who cannot program, and who do not really understand the internal operations of a computer--are able to use the power of the new technology in ways unthinkable just three years ago--word processing, accounting spreadsheets and fiscal projections, graphics, scheduling, telecommunications, etc.

A major issue for the university is how to respond to the microcomputer revolution. The effect of the fierce competition among microcomputer companies and the ensuring media coverage has put pressure on universities to respond in some way. Wherever we turn we read or hear about the wonders of the microcomputer. And there are wonders! But, as in all such cases, the race to sell machines creates a sensational atmosphere that oversells the public on what can be accomplished. Microcomputers are exceptional tools to aid the educational process and to increase our access to information. They are not magic! They are not a replacement for education!

Universities must come to terms with questions about computer literacy and use and, in doing so, must involve policy-oriented administrators, faculty, and staff as well as sophisticated computer-oriented experts. Unfortunately, up to this point in time many of the decisions have been either an unthinking knee-jerk response to the need for computer programming skills or the resistance of some computer experts to the implications of microcomputers and available software. The result has been that a growing number of universities have developed a requirement that all students learn computer programming; in other cases, students who are interested in learning about microcomputers are strongly advised to take computer programming courses. This is not necessary! Marc Tucker, an information technology expert, was recently quoted in the Wall St. Journal, "The computer is a powerful tool, and courses should concentrate on applications of the tool, in ways that extend the student's intellectual power. Students need to learn how to use data, to use word processors and spread sheets. Programming is not what it's all about." You don't need to know how an internal combustion engine works to drive a car nor how to program to use a microcomputer.

The microcomputer is not an arcane piece of equipment accessible only to the expert. Because of its significant power as an educational tool and its ease of access it must be treated by educational policy makers as part of the academic support services of a university available to everyone, much as we treat other resource materials; e.g. videotapes, films, books, and periodicals. The question of how they will become integrated into a course--and they will become integrated into most--will be a decision of an individual faculty member who has become somewhat knowledgeable about how students can best use microcomputers to learn the course material.

There is a real revolution in information technology led by the charge of microcomputers into our lives and into our colleges and universities. How does all this relate to our libraries and librarians? Very directly and, potentially, very positively. For, in my opinion, the microcomputer revolution not only can assuage the twin scourges of inflation and fiscal constraints--but offers libraries and librarians the opportunity to assume significant new roles of informational and educational leadership on their campuses.

1. The microcomputer is an informational technology tool and it is the responsibility of libraries to provide information. The microcomputer provides ease of access and decentralized access to an increasing variety of networks of information. It is a superb information retrieval tool that will enable a library user to gain quicker and more comprehensive access to sources of information--both through commercial sources and through university and research centers. Exhibits shown at this conference are but a small selection of those available.

2. The microcomputer could provide an alternative means for gaining access to materials that have become cost prohibitive for universities such as limited use periodicals and books. Publishers will likewise recognize this and begin electronically "publishing" such materials for microcomputers.

   Such computer publishing could be important to many areas of scholarly research where hard-copy publishing is becoming more and more difficult. The combination of easy access through microcomputers, and the capability of making hard copies where necessary with high speed printers at sharply reduced costs, could lead to significant changes in future access to research reports and scholarly monographs.

3. While numerous kinds of research-oriented bibliographic sources will be developed along with commercially available retrieval networks and the computer-publishing of materials that have become cost prohibitive in hard copy, it is also a possibility that publishers will increase other non-trade computer publishing. This could result in a radical change in the operations of our future libraries.

4. The library is the most appropriate location at the university to train people in the use of this new information technology, especially the microcomputer.

   In the next few years, ability to utilize microcomputers may be almost as common as knowing how to drive a car. In fact, even I have taught people how to use sophisticated word processing systems in half an hour. People will be able to learn how to utilize such powerful information technology in short courses. In fact, much more time will be spent selecting and learning how to use specific programs than learning about the computer itself. As a result, the library may very well become the center for short workshops on how to use microcomputers, much as many libraries have become the primary instructional unit for teaching people how to utilize the numerous bibliographic and information resources available in the library.

   I would assume that very specialized applications of microcomputers in specific subject areas would be taught in those areas. The computer applications would be the equivalent of learning other techniques taught in those courses. And the availability of microcomputers in the library for classroom assignments would be the equivalent of placing books on reserve.

5. The key to the proper application of the microcomputer as an educational tool, like that of a textbook, rests with the interest and knowledge of the individual faculty member teaching a particular course. The library may be the primary focus for faculty development in this area. As librarians work with faculty on providing up-todate source material, it is a natural extension for them to help faculty develop their skills in microcomputer applications.

6. To facilitate campus-wide access and use of the microcomputer, the library should and will maintain elaborate microcomputer labs which will enable students to use them as they would other instructional materials. The library should become the key to such access and use for a number of reasons:

   - first, the library is a low threat environment in which all students and faculty are continually interacting to fulfill their information needs.

   - second, the library is a central resource whose staff pride themselves on maintaining access to information resources.

   - third, the library is the only campus unit that is organized to handle the information needs of large numbers of students in an orderly, systematic fashion.

7. Because almost all academic libraries must computerize their card catalogues (following the lead of the Library of Congress), librarians will have to gain sophistication in the use of computers to access the catalogue itself. Librarians will also have to provide instruction to faculty and staff on how to use the terminals or microcomputers that will be the main means of accessing the library catalogue. Therefore, while the introduction of microcomputers into the library will force librarians to learn new skills, many of these skills would have to be learned anyway to operate even the most conservative library.

In summary, the fiscal pressures on universities, libraries, and publishers and the power of microcomputers will sharply increase the use of computers as a means of gaining access to information services, especially to limited use materials; commercial vendors, academic libraries, and learned societies will develop extremely elaborate information retrieval systems that will be accessible by microcomputers; microcomputers will become extremely common on campus and in homes of faculty and students and will be extremely easy to operate; librarians, as information technologists, will become expert in the use of microcomputers as educational tools and as access points to information sources; and because of the microcomputer's role as an educational tool and information source to support courses as well as faculty research, the libraries will become the center of the campus for access to microcomputers and needed software, and librarians will become the primary instructors for educating faculty and students about the use of microcomputers and software applications.

But why the library?

Answers to this question require an appreciation of the needs of information seekers, the role of librarians in fulfilling these needs, and the role of the new information technology. Basically, the principal role of the library, and especially the reference librarian, has been to provide a link between the user and information resource. To accomplish this requires an ability to define the information problem, to understand and be sensitive to the needs of the individual student or faculty member, to be knowledgeable about available information sources and to know how to gain access to them in a reasonable time period. In the last decade many librarians, realizing students' ignorance of bibliographic sources through painful experience, have developed bibliographic instruction materials such as workbooks for freshmen to introduce them to the library and its bibliographic sources. Even more recently, workbooks on bibliographic sources have been developed for disciplines to enable students to avoid the time consuming trial and error method of learning how to search out needed information. In both these instances, reference librarians working closely with faculty have become instructors for a number of class periods in introductory English classes and research methods courses in the disciplines in order to facilitate a student's use of the library resources.

In providing these services, librarians have become an important component of the instructional process for developing skills in the use of new and old information sources. They themselves have developed skills in instructing students and faculty on these matters as well as having maintained their traditional roles of being primary information resources for faculty and students.

Further, librarians--at least the effective ones--in their efforts to serve the needs of faculty members and their disciplines, have developed an understanding of faculty information needs across the campus through interviews with faculty as well as the utilization of bibliograpic services. In fact, it is probably true that the staff of the library have a better sense of the intellectual needs of the entire faculty, or any significant segment, than any other group on a university campus. This university-wide perspective has enabled them to plan the university's collection needs and will enable the library to effectively serve the university as the faculty become more attuned to the power of microcomputer applications. In the last few years libraries and librarians already have had to gain sophistication in the use of computers due to the growth of computerized data bases and the necessity to automate library operations. In brief, librarians have shown the potential to become the central campus resource for the new information and communication technology.

The computer center with its highly sophisticated and powerful main frame computers and related equipment is an essential component in the operation of a university; it will become a utility that serves the data processing needs of faculty and students and as a central point in linking up the everincreasing number of microcomputers to internal and external networks. However, the Computer Center does not seem to me to be the appropriate university unit for providing large-scale access to microcomputers applications. Its staff does not have the skills to instruct faculty and students about the potential applications of microcomputers, or to provide linkage between the information needs of the unsophisticated user and the available information source,

whether that be a simple program, an internal computer network where data can be processed or information obtained, or an external computer network.

In the future I see the library playing the central role in serving the information user and linking that user to the appropriate technological tool, which might well be the computer center hardware. No doubt, engineers and other computer sophisticated faculty and student users will work directly with the computer center. However, many others who have questions about what information tool they should use will go to an information technologist in the library. By doing so they will be provided with the widest array of information sources to fulfill their needs.

Change does not come easily nor is it patently predictable, and the introduction of the powerful new microcomputer technology is no different. Inherent in the new technology are the human foibles of over-enthusiasm, straight-line projections based on limited experience, and the by-products of the fierce competition among commercial vendors. We are already experiencing projections of too much change, some of which smacks of the absurd, some of which is just plain over-zealousness. No matter what the enthusiasts tell us, there will still be numerous hard copy books for there still is money to made in the publishing of books and convenience in using them; people will just not lie in bed gently holding onto their microcomputer. But just as obvious, very limited circulation scholarly texts will no longer be published in hard copy; it doesn't make economic sense to the publisher or the library nor is it particularly helpful to the scholar who would prefer having greater access electronically to numerous limited circulation scholarly monographs than having limited access to a few hard copy books that a publisher was somehow willing to print.

I would like to close this talk by raising a few issues which deserve our attention as we introduce microcomputers as an important educational tool.

A. We must make judicious use of the microcomputer in the learning process. We must be cynical about its role as a panacea for educational problems, and highly analytical in the best ways to use it as an educational tool. It is an important educational tool but it is just that.

   1. We must remember that the microcomputer should augment faculty-student relationships, not replace them; learning remains an interpersonal process. The temptation for a highly individualized learning environment may be great for older students with less time but they, as much as younger students, need the intellectual role models of successful students and faculty, the interpersonal interaction with peers and teachers regarding intellectual matters to stimulate their personal development and facilitate the maturing of their intellectual abilities.

   2. We must remember that microcomputers are built on a model of super-rationality and logic while human learning is often based on intuitive leaps of insight.

   3. We must remember that microcomputers are great sources of information and will be extremely helpful in augmenting memory. But

they are not good sources of conceptualization, of knowledge, or of wisdom.

B. We must be concerned about who controls information networks. This is one of the most critical issues that libraries and universities must face. How do we maintain open access to the world of information? Will commercial vendors stake out the domain before universities can? What are the implications of proprietary rights to scholarly and biliographic ventures that have traditionally been open through the role of academic libraries? Will commercial vendors balkanize the information networks? These and related issues must be dealt with very soon or universities will find themselves afloat in a commercially competitive world. Even though the cost of development may be great, the sheer power of larger computers and computer networking have made possible the accumulation of information inconceivable a few years ago; at the same time the presence of microcomputers of all shapes and sizes which can gain access to these information networks has created the potential for commercially viable information sources that could limit the freedom of access so common to academic life. The irony might be that as we finally have created the tecnnological tools to harness the enormous growth of information of the last three decades, universities may lose control of open access to the information produced directly and indirectly by universities. We, as university educators, must be the watchdogs of the free flow of information.

Whichever way any of these issues is resolved, the library and the increasingly technologically sophisticated librarians can and should be at the center of the major developments in the use of the new information and communication technology in university life and, therefore, because of the critical imortance of this technology to the entire university, intimately involved in university policy development. The basic challenge for librarians is whether they are prepared to reeducate themselves, whether they are prepared to take the risks inherent in being at the center of major new developments, whether they are capable of entering into the political dialogue of university policy making that will determine the allocations of resources regarding new information and communication technology. Some would say that it is safer to stay on the edges of the policy debates, to quietly learn about the new technology and slowly adjust to it, thereby avoiding new responsibilities inherent in being the primary instructional unit for microcomputers and service unit for computers generally. It is safer but so is the quill pen. The problem is that if librarians take this attitude, events will pass them by. We need a strong academic library system with creative and energetic librarians who are willing and excited to take the risks necessary to move the library of the future into a central role in the day-to-day life of the university. It is essential for the future health of our universities--and our libraries!

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WHAT A COLLEGE ADMINISTRATOR EXPECTS OF AN ACADEMIC LIBRARY

Robert A. Plane, President
Clarkson College of Technology

Let me begin by making an assertion that I cannot prove, although I will support. It is that on any college campus every intellectual activity, be it teaching, research, or administration, can best be conducted in the library.

Let me support this assertion with several incidents from my career which left deep impressions. The first occurred during my previous life as provost at Cornell where perhaps the most difficult single task I was expected to solve involved expansion of the law school library. In the end, it proved an impossible task because of the way the law school building was built. Each professor's office emptied into the library, so that the library was totally corralled by professor's offices, making it impossible to expand either the number of offices or the size of the library. In trying to understand why a building would be built the way it was, I came to realize that, indeed, the library is central to everything a professor does in his office. It provides a magnet for bringing together faculty and students in proximity to one's office. It solves all the problems of source material, book storage, and the rest.

My first research experiences were at the University of Chicago where, as a chemist, I was constantly running between my laboratory and the library. One could tell from the condition of reference books in the library that I was not the only one who used the library in close conjunction with the laboratory. I vowed then, and have made it my practice since, that I would try to locate my laboratory as close to the library as possible. The ideal would be to have the laboratory inside the library.

Finally, if I were given the choice as to where my president's office would be located, I would choose the library. Not only for its symbolism and utility, but as a way to see the people I want to see, easily and naturally. I know that if I did, most other administrative offices would follow suit. Thus, I believe the truth of my statement that everything on a college campus, teaching, research, and administration, can best be done in the library.

Because of its popularity as the center for all college activity, the college library faces a special threat. It can't possibly live up to everyone's expectations. The only thing rising faster than library costs are people's expectations for its many services and facilities. It follows, therefore, that the solution to the library problem of

the future will demand two actions. The first of these is a careful ordering of priorities, and the second is a careful plan of decentralization. I emphasize "careful" for both actions because I believe that some of the worst problems that the college library faces today are due to the less than careful way in which library priorities have been established and the way in which the college library has been decentralized into closet libraries throughout the campus.

In designing a new library at Clarkson, a group of advisors helped us list the priorities for an academic library. We then matched this list of priorities against the way our college library was actually being utilized. In the process, we found that two items low on the priority list from our advisors were requiring high priorities in terms of our space utilization. The first of these was providing study hall space. The largest single use of our library was by students fleeing the stereo halls, that we call dormitories, in search of a quiet place to spread out their work materials and to find a place to study. On our final list of priorities we gave no weight to use of library space for work with materials brought in from outside.

The second of these was using the library as a museum. I remember an incident in which the college had been given a flag embroidered by one of the Clarkson sisters. After the donor left, I asked my secretary what to do with it, and she said that we always send things like that to the library. This is an extreme example of a problem which I suspect many other academic libraries share. We have now become ruthless in selling or tossing materials given to the college which are of marginal use in providing information.

As a result of our planning exercise, two priorities received increased emphasis. The first of these was our top priority: providing information access. It was made number one, far ahead of everything else. To illustrate, we decided it is not particularly important, perhaps even improper, to count the number of holdings in the library. What is of real importance is the number of sources of information that students and faculty have access to. Whether it happens to be owned by us, owned by a sister institution, or available from a data base matters less than its accessibility for faculty and student use. Our goal has been information access, and this access should be independent of the technology or medium in which that information is provided. I like to remind people at Clarkson of this fact because we may have strayed from our initial goal. When we started, we were concerned with spending too much time on, and giving too much attention to, written material. I would say in candor that we are now

equally guilty of spending too much time on, and giving too much attention to, computer material.

Because of our dedication to information access, we do not allocate space in our library for student study, but we do find space for teaching. We have, in fact, experimental classrooms in our library. In many instances the experimental classrooms provide the best way for information access and, at the same time, symbolize the teaching function of the library.

To me, the most startling suggestion from our advisory committee as to library priorities was the function they placed second. It was one which we had traditionally down-played. It might be called the social aspect of the library. The advisors noted that the best way to access information is still on a face-to-face basis, as with Mark Hopkins at the other end of the log. Consequently, the largest single area in our new library is a commons area designed to be attractive and to facilitate faculty and student discussions. It has a cafe-like atmosphere with round tables, benches, and vending machines for food and beverage. The intention is to transmit information on a personal basis whether faculty to faculty, faculty to student, or student to student. Although this substitution of talking space for study space is often puzzling to new students, I remain convinced that it is the correct use of library space in that it is true to the principle that information transmittal is our top priority.

Much of the task of information transmittal can lead to decentralization of library services. In fact, as technology allows such decentralization to occur, some predict that a library becomes more of a service than a place. To the degree that its service can permeate the whole campus, we start to realize the ideal that everything on campus can best be done in the library because the "library" has become the campus. It seems that the technology needed to handle the information required for college functions and to disseminate it to the whole campus will be computers. Based on this belief, the principal difference between our new library and our old library is the complete amalgamation of the computer center and the library. We speak of a single staff with all functions coming from this common budget. Although the merger has not always been perfectly easy, it has gone well, and I believe the results are certainly worth the effort. An example of this merger occurred a couple of ears ago when I attended a summertime symposium organized for the faculty on the use of computer graphics in engineering design courses and run by people who prior to merging the staffs called themselves librarians. Having computer people interested in solving information problems and library

people able to fully utilize computer solutions is just what the task demands.

Rather than decentralization of library functions into departmental libraries, our solution has been to build a network which will link classrooms, professors' offices, and dormitory rooms. From the start, our thought had been that the method whereby one would access the information would most probably be a computer terminal.

We recently found that a cheaper and better way to do that is through the use of personal computers which will be attached to the network. Consequently, this past year we provided personal computers for all of our entering students and for all of our faculty. Our reason for doing this was twofold. In the first place, we couldn't provide terminals to our mainframe fast enough. When we passed 300 student terminals, we saw that it would take thousands to reduce the queues. In the second place, we saw increasing numbers of students bringing their own computers to campus. In this, we saw a problem. Let us suppose I am teaching a course in which computers will be helpful to my students. The students are armed, each with a personal computer varying from game machines to sophisticated devices. Do I allow the student with the best computer to make the top mark in my course? Do I dumb-down the course to the level of the poorest computer in the class? It is a situation like that which must have brought into being the first academic library. After all, we did not force students to provide their own libraries and then reward the wealthiest; nor do we sink to the level of the poorest. Incidentally, the utilization of these computers in all classes at Clarkson has been surprisingly successful. The task that remains, however, is the one we started with: to network the computers by tying them to the central facilities at the library-computing center. This will make our decentralized information access system a reality.

When our network system is complete, the library will become a node or hub linking all parts of the campus together. Once all parts of the campus are so linked with information flowing freely between all points, it becomes relatively uninteresting as to where the information originates. By linking our network to external data bases, one may never know whose holdings are being utilized. At that point, we will indeed have elevated information access to top library priority. However, just to ensure that we understand the distinction between gaining information and learning, I am pleased that we will always have, right in our library, both classrooms and a commons area

for person-to-person discussions and true learning.

An indication that the realization of our plan is occurring comes from the observation that this year, with the personal computers in the dormitory rooms, dormitories have become quieter places where study can occur. Rather than flee the dormitory to the library for study space, students can now study in their rooms and go to the library for discussions. Thus, it is a very different kind of library than I grew up with and very different from any I ever expected to be associated with, but it has become what this college administrator expects of an academic library.

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RAISING LEVELS OF ASTONISHMENT: CRITERIA FOR ACADEMIC LIBRARY LEADERSHIP

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The statements which I am about to make are part memoir and part statements of principle. The memoir portion deals with several indelible situations and episodes from childhood and youth--things which left me with a positive impression about libraries and librarians, things which I once thought were typical of the life of most persons raised in the Midwest in the 1930's and early 1940's, but which I now find were unique.

The second part deals with my exposure to the library and architectural professions in college and graduate school, as a teacher, and then as a college president. None of these experiences were earth-shattering. They occurred over a number of years amidst a busy life involving many other activities, that is, growing up, getting educated and started as a teacher, having a family, and moving about. These experiences were formative in that they shaped attitudes toward learning and the world of ideas. And, finally, this background was called upon for the purpose of a highly challenging undertaking, that of planning and building a new institution, the centerpiece of which was an academic library. We shall conclude with some observations on library leadership within the academic community.

Starting with growing up in Cincinnati, I should note that Mother regularly took it upon herself to read aloud to the entire family at mealtimes--mostly through the evening meal. We had little choice in the matter. And looking back, I can see there are three possible explanations for this: one, that by reading, Mother decreased the probability that the four children present would fall into arguments which would spoil the tone of the dinner hour. Second, she might have read aloud to avoid eating--thereby controlling her weight. As children, however, we were never aware that she needed much improvement, particularly to be bigger or smaller than she generally was. Third, and most likely, she read aloud to the family to educate us, to improve our intellectual diets, and to fortify us for the world ahead. In any event, as a school teacher herself and the child of a college professor, we were very much aware that Mother was intent on improving our minds, of cultivating intelligent conversation and a sense of civic obligation, and reminding us that the world of ideas and public events were important.

What did she read? Bunyan's Pilgrim's Progress, whole sections of the New Testament together with commentaries from a set of religious books, now forgotten, but I do remember the pious pictures. She also read Herbert Agar's history of America's political origins, The Price of Union. And poetry. She read Longfellow, Whittier, Whitman, Dickenson, and others, not once, but repeatedly. In high school when we came to Chaucer's Prologue to the Canterbury Tales Mother already knew it and taught each of us to memorize it in Middle English. In addition, my older brother and sister brought home from high school, questions and problems which arose in their classes so that their homework frequently became the stock of dinner conversations when Mother wasn't reading aloud about something else.

For some years before and even well into the Great Depression, Dad was a willing victim of encyclopaedia and book salesmen. When I left home for college I remember we had not only the usual encyclopedias, but also sets of

the complete works of Kipling, James Whitcombe Riley, and Mark Twain. And, in history: Francis Parkman, Bancroft, and the Pageant of America. Perhaps the most used and consulted element in this bookish family was the Grolier Society's Book of Knowledge, a complete set of which occupied a bookcase just outside the bathroom door, together with a collection of literature and art for children, The Young Folks' Treasury. Finally, the National Geographic was all over the house together with fugitive materials on American Indian arts and crafts, a biography of General Grant and Mother's special magazines such as The Literary Digest and The Western Christian Advocate and later, America and Commonwealth. In a real sense, Dad was part of the conspiracy of reading as much as was Mother.

Mother later ran a Catholic bookstore in downtown Cincinnati where I am certain she influenced the lives of not a few seminarians, clergy, and religious by having read many of the things she recommended to others. This was thirty years before the second Vatican Council, but there was already a vigorous literature of social and spiritual development coming out of England, Germany, and France--with which she was well acquainted and could speak knowingly to others, much of which was later incorporated into the documents of Vatican II. Much of this was above my head at the time, but the pleasant environment of ideas, lengthy conversations, interesting people, and books was part of our lives.

In one of Cincinnati's newer high schools, built during the Depression, our school library was architecturally and intellectually attractive. It was staffed with real librarians who were teachers as well. They not only enjoyed young people but could convert student inquiries, perplexities, and discussions into treasure hunts pointing to the literary and intellectual resources of print materials. To be fair I should also point out that these high school library experiences also provied a peaceful alternative to the seething bedlam of 7th bell study halls!

In addition to home and school, our library exposure included the helpful staff of our neighborhood Carnegie Branch Library, only four blocks away, to which we could repair sagely in early evening. It was here that my bother and I discovered the rewards of browsing and the fascinating array of fiction for children. We recall particularly the brownie books, fairy tales bound as the Blue, Yellow, Green books of fairy tale, and in later years, adventure books, starting with Joshua Slocum's Sailing Around the World Alone, and technical books when I began to build radios and develop pictures.

There was another casual, but youthful exposure to library resources in downtown Cincinnati. Downtown was accessible primarily because my piano lessons for a time involved a trip by street car once a week to the teacher's studio in the old Lyric Theater Building on Walnut Street. Motivated less by love of music than by the adventure of being downtown alone, these junkets provided several new opportunities while I waited for rides home with my father. After music lessons there was open time for poking about ten cent stores, for reviewing the holdings of a magnificent hardware store adjacent to the street car stop and for braving the precincts of the main library near 7th and Vine Streets from time to time. That library's central location, its accessibility to pedestrian traffic and the high regard in which it was held by good teachers and my parents also gave it high marks in my book. It was

there I discovered a low level occupation--that of library pages or runners, people who for a slip of paper with numbers on it, could retrieve materials from shelves never seen by the public.

When a few years later I found that serious students could gain access to the stacks of a university library still another dimension of library learning opened up, and I spent perhaps too much time browsing instead of completing the tasks which brought me to the library stacks in the first place. There I learned that classification systems were not simply randomly related to the world of ideas, and that card catalog listing could not substitute for the feel and review of a book first hand. Browsing also taught me that it was wise to examine several books on either side of the volume sought in the stacks to discover how they might illuminate the inquiry at hand. Add to these experiences a number of excellent classroom teachers in high school and college who sucessfully motivated students to develop a sense of wonder or, at times, doubt, about topics under scrutiny. They taught by example what was compatible with being read aloud to at home, that intellectual curiosity has its own rewards and personal satisfactions.

Several elements came together from these early home, school, and college experiences with books. I learned that love of books, the cultivation of taste about a wide range of print and scholarly materials existed quite outside the bound of credit hours, examinations, library regulations, and circulation practices. Moreover, much later I came to realize that in an ideal university these things might be brought closer together so that classroom and laboratory instruction might be normally related to library resources and intellectual inquiry, instead of being hostile to it, or at least estranged from library learning. I also learned that textbooks as such seldom stimulate a love of ideas, a feel for sources, or the critical sense of what was best and what was second rate among source materials. It would take a unique combination of good librarians who were teachers, and of teachers who could see the libraries as alternative classrooms and laboratories, or at least integral with the style of teaching and discussion in the classroom to overcome "textbook dependency".

Some years later I was assistant to the president of a liberal arts college engaged in designing and building a new library. It was here, in the mid 1960's that I found wise consultation at the Council for Library Resources in Washington D.C. Through friends I also discovered the work of Patricia Knapp, whose doctoral dissertation at the Graduate Library School at Chicago was published as a book entitled The Library and the Curriculum. Mrs. Knapp was at that time on the staff of Monteith College, a new experimental unit of Wayne State University in Detroit. The faculty of Monteith and Mrs. Knapp had developed a new undergraduate plan of studies. They also worked up library and curricular strategies together in those early years of Monteith. I went to Detroit and met and talked with these people and brought my findings back to the little Vermont college where a good local architect was engaged in designing the new library to be as hospitable an environment for study and inquiry as possible. But the big opportunity to implement a philosophy of library practice came six years later when I was invited to be the founding president of Sangamon State University in Springfield, Illinois.

Starting with an architect, 740 acres of corn and soybeans, a generous

appropriation from the legislature, and a highly cooperative governing board, Sangamon State University was mandated to be an upper level and graduate institution, but was given only one year to open for students. With that timetable, two plans were essential: a short-range plan to build an interim campus to accommodate several thousand students, and a long range campus master plan to provide buildings sufficient to accommodate 10,000 students in ten years. This would involve an anticipated plan for 18 permanent buildings designed around a plaza on which I was convinced the first permanent building should be placed: the university library.

By a fortunate coincidence that choice of the library as the first permanent building was highly appropriate. The firm, Murphy, Downey, Wofford, and Richman, of St. Louis, was uniquely qualified for that decision. That firm had recently won a design award for the Olin Library, a handsome structure built for Washington University in St. Louis. And second, Joseph D. Murphy, the senior partner, understood college and university libraries in the best sense, having also served for several years as Dean of the School of Architecture at Washington University. In the decade which followed the founding of Sangamon State University, that firm built libraries for the University of Rochester, The University of Colorado at Boulder, Illinois State University, and for a number of smaller colleges in the Midwest.

Mr. Murphy had no difficult thinking about the multiple roles which good libraries play in teaching, scholarship, and campus life. Patricia Knapp's findings and the notion of the library and the curriculum made sense to him, as did the need for good design, high levels of seating, open stacks, and the notion of librarians as teachers of library skills, collabcrators with classroom teaching, and stimulators of library learning.

A second fortunate decision involved the choice of the first SSU Librarian, Mr. Howard Dillon. A native of Green Valley, Illinois and a graduate of Knox College, Dillon was librarian for the Graduate School of Education at Harvard University, and had just completed an invaluable three year effort of cooperative planning with faculty, staff, architects, contrators, and others for the new library for the Graduate School of Education. His availability for the job at Sangamon State was related to his keen interest and competence in library and staff development.

Putting together my own idealism about libraries, and my expectations for library leadership with those of Patricia Knapp and Howard Dillon and our talented architect, provided a once-in-a-lifetime opportunity to design a library for a new institution with a new curriculum, and with a new faculty dedicated to excellence in teaching and other good things. From this experience I have developed several principles which I shall share as a checklist which might be helpful in advancin or at least, in thinking about academic library leadership. They might be called element or contributing elements of library leadership.

1. Regardless of when it was constructed, whether it has adequate seating, support facilities, and holding, the library must display "environmental quality". How would the library stand up to an "environmental impact" report relating to the quality of its services and its environment for learning? Few institutions have had the gift,

as we did, of a new building beautifully designed by a wise librarian in collaboration with a gifted architect. But almost any institution can make the library an attractive place, by means of layout, seating and study facilities, color and texture of materials, and above all, by the spirit and competencies of the professional staff. More about the latter a bit later.

2. Are the library holdings related not only to a variety of teaching styles and the usual degree programs, but also to the talents and intellectual interests of the faculty and to a certain extent to the wider community? In Springfield,Illinois, we have a remarkable group of libraries whose holdings the university cannot duplicate, but which are accessible through several cooperative library networks. These include not only the State Historical Library, but also the State Library itself, the State Archives, and a first-rate public library, Springfield's Lincoln Library. In a certain sense today, a university can be as responsible for the collections it does not possess as it is for those it does possess. In Illinois and increasingly across the country, there are state and regional networks of college and university libraries with computerized access and prompt loan services to satisfy the most demanding research inquiry. This is not enough, however.

3. Supposing sophisticated access to holdings of great variety in one's own, as well as in local and network institutions the next question is: what is the quality of administrative and "delivery" systems of the institutional "base" library? That is, bibliographic control, management of circulation, staff versatility and teamwork? How is the library's mission to "delivery of services" in support of teaching and research perceived by users? By Faculty? By administrative superiors and governing board? Or are these things a technological achievement without reference to the teaching and research missions of the institution?

4. With the great expansion of library material and the increased sophistication of access tools - i.e. the "information revolution", have we likewise expanded our capacities to absorb, to order, to integrate what we know and do? The quality of choice, it seems to me, must improve along with the technological progress in access. But the quality of choice is related the effectiveness of internal administration of the library itself.

5. If we consider all professional librarians as teachers--and to some extent, all library staff are teachers and vendors of information services, what barriers stand in the way of collegial commitment to teaching--to being an "instructional service librarian" (a strangely awkward phrase for a professional group of people in its best sense)?

6. What about the quality of library staff? It goes without saying that they must have faculty status, but what does that imply? Are they entitled to be as narrowly professional as some teaching faculty? Or are they required to possess at least some understanding of the diversity of methodologies and pedagogical approaches which other

faculty ask of themselves and their students? Or are tenure track librarians to behave like faculty in not a few other specialties, i.e., insulated by language, method, and the sociology of their disciplines and workplaces from colleagues as well as immediate peers outside their disciplines?

7. Are there provisions for professional growth of professional library staff so they are better integrated into the teaching and scholarly community in which they work? It isn't a question of women's liberation, faculty status, and pay equity, to gain such a place in the academic sun; it is also a question of library liberation. Do the Deans and Academic Vice President cherish these values and follow those commitments with budgetary support from superiors?

8. Finally, is there a viable, working master plan for the library and its role in the several missions of the institution? How well understood is that plan, and how faithfully followed and/or periodically revised? Does the Director or Dean of Library Services have the access, the clout and the skill to sustain budgetary support, communicate the mission, and nourish staff development of the kind we have identified as basic to library leadership? Does internal governance and management of the library encourage or chill collegiality and common reflection of the goals and performance of the library?

It should go without saying that library professionals should not be engaged in doing what well supervised clerical staff can do for them, that they must possess teaching as well as reference and bibliograhical skills, and that their superiors must free them from "administrativia" to allow time to teach. I should like to see all university faculty display strong bumps of intellectual curiosity, with treasure hunting and bird-dogging skills that are so important to learning environments. But especially librarians. Few but the most experienced senior faculty will have "connected views" of the world of learning and appreciate fully how libraries and classrooms are tied together in good teaching--but librarians are in a position to understand the differences among the arts, sciences, and professions. Some deal with immediate practical judgements, professional technique, and accountability while others are of a more theoretical, abstract nature. Aren't instructional service librarians mandated to such views? Because of the narrowness of much faculty graduate training, and of current notions of professional recognition and rewards, we can exempt or at least excuse some faculty for an undeveloped sense of these matters, connected view of things--but not librarians.

In my judgement, library professionals are one of the few who must have a sense of the world of ideas, of the connectedness of learning, and, most important, a refined sense of judgement about the value of where the best, or the most competent works can be found. Can librarians, particularly in acquisitions and reference, tell good books from poor ones, first rate journals from the second rate, good writing from poor writing? Similarly with publishers: can they tell blue-ribbon publishers and imprints from second-rate ones? Regardless of their reluctance to have such opinions--for fear of diminishing the openness of library holdings, budget constraints and experience forces library staff into such judgements. And the teaching

faculty constantly cultivate critical, selective tastes among students. Or must the instructional services librarian assist only in the search and discovery, then put the meat on the stump, point to it and tell students to go get it if they wish?

I have found that many contemporary undergraduates do not understand where footnotes come from--they see footnotes and bibliographical listings as a garnishment designed to make term papers look right, not as a system of scholarly acountability and acknowledgement. This reminds me of the student who, some years ago, turned in a paper with a complete bibliography but apologized because he could not find any footnotes to make it look better. Such incidents point to another mission of the library, its staff, its environment. That is, whenever possible to teach by example and taste, the virtue of intellectual honesty, which, far more than charity, is the binding quality of good academic communities.

Where are the role models for such ideal principles? Quite by accident I found an eminent example: It is Keyes Metcalf, former university librarian at Harvard, former head of the New York Public Library, and before that, of the Oberlin College Library where he once worked as a teen-age page. Metcalf, in a memoir written in his 80's, Reminiscences of an Anacronism, felt obligated when appointed to head the Oberlin College Library, to take over his first few years, one course in every department at the college - except those of Geology, Physics, and Fine Arts. (He apparently didn't need the latter courses because of lifelong reading habits.) But that gesture of learning the languages of the academic disciplines and of understanding to the academic community and the work of his colleagues so he could serve them better, stood him well for the rest of his long and distinguished career. In later years Metcalf was the nation's most demanded consultant on the human and professional elements of library design. He was keenly aware of what I describe as the burden of learning deficits which we all possess, despite being credentialed laborers in academe. Metcalf did something about it to the benefit of all the persons whose lives and institutions he touched. Should I add that he, too, was read aloud to as a child in a modest, but wonderfully bookish home? Incidentally, the people at Harvard had to come twice to New York to persuade him to move. He was suspicious of Cambridge, which is proper for an Ohio boy, I suppose.

In conclusion I am reminded of a mordant comment of Mark Twain who once addressed a young people's church group in Brooklyn, New York, counseling those present to: "Always do right, it will gratify a few and astonish the rest." My oncern is that librarians are in positions which can raise levels of astonishment in colleges and universitites and in doing so can contribute to the stock of good teaching, scholarship and lifelong learning which we so badly need in our culture. I would like to think that is what library leadership is all about.

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CONFESSIONS OF A FORMER SCENIC DESIGNER

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University of Colorado at Boulder

Have you seen the librarian's tee shirt that says D-E-W-E-Y on the front? On the back it says, "WE SURE DO!" And I'm here to tell you that it is true--Dewey does, L.C. does and librarians in general do. If you wonder what, just listen.

I thought that my remarks should be entitled, "Confessions of a Former Scenic Designer," because I'm going to tell you how ignorant I was in many of the ways of libraries before the "age of enlightenment" came along.

What scenic designers need to know is primarily of a visual nature--what a Russian stove looks like, what kind of chairs should be in Henry V's receiving chamber or how big the hoops on Scarlet O'Hara's skirts should be. We need to know about painters and architects' work throughout history. This kind of research is certainly meaningful, but is is relatively narrow in scope. That is the kind of research that I was qualified to do, but one day...

I went back to graduate school to begin study for a Ph.D. in theatre history. We MFA students at the University of Iowa had not been required to take a research methods course, we were artists not scholars. My Ph.D. committee must have assumed that I had had such a course, because I was allowed to go blissfully on my way at Indiana still unaware of my ignorance.

Fortunately, my dissertation research was done primarily in the Indiana State Historical Society's library and in old newspapers. In the former I could simply request special collections of letters and papers at the reference desk. The latter was no more complicated, but it did have its problems.

Some of you will remember the old days of newspapers bound in six months volumes. One had to lift weights in order to train for that kind of research. Newspapers at Indiana in those days were stored in the sub, sub-basement. Talk about your in-depth research! A dust mask and five pounds of rat poison were the standard operating procedure. Sometimes I considered switching to a career in coal mining in order to get a cleaner job.

Well, that is the background which I brought to the University of Colorado, but you must remember that I came here as a designer. A number of years ago I was offered the opportunity to teach our research methods course--offered the opportunity is not quite accurate--I was simply assigned the class. Since I had never had such a course, I needed help. So I went to the library. And this is where my age of enlightenment began.

I had seen occasional references to a crash course for Ph.D. candidates provided by the library in the library. It was called "DISSERTATION ACCUPUNCTURE, the Painless Catch-up Solution for the Unprepared Doctoral Student."

If there could be a painless method for doctoral students, surely it couldn't be too painful for faculty. It was Professor Mildred Nilon who came to my rescue, to be followed by Deborah Fink and Skip Hamilton in later years. At Mildred's suggestion, we brought my research methods class to the library for a number of meaty sessions. Each one began and ended with what I still consider the best advice for anyone doing research--WHEN IN DOUBT, ASK A LIBRARIAN.

To this day it is still the best advice. Librarians love to be asked. Give them a tough question and they are in heaven. I won't take time to detail for you the scheme which we used for all the years I taught Intro to Graduate Study--a method which my colleagues still use. Suffice it to say that library specialists met with us and we learned about reference tools starting with the card catalogue. We needed to start there and so do most other college students, whatever their level. The amount of information that can be found there, if one knows how to search the subject index, really search, continues to amaze me. I'm convinced that one doesn't just "pick up" this information, it must be taught--and by specialists. I continue to be surprised by the number of guides and indices which there are--those wonderful shortcuts which librarians know, and which they introduced my class to and showed them how to use. New ones continue to appear and one must be constantly involved with researching to keep up and know what is available. My library friends point these out to me on every visit.

In this age of the computer we learned how to plan for computer searches, how to get the most for the least amount of time and money. We have become so computer conscious that all of my graduate students think of titles in dissertations. Their work can be useful to future researchers only if it can be found, and they want it to be found and used. No longer does "Closing on Saturday Night" seem like a good catchy title for a study about the vaudeville seasons in Memphis, Tennessee prior to 1930. When, where, and what words are necessary for the computer to find the project and we have seen this demonstrated time and time again.

Our research methods class still meets in the library as often as in our own classroom. We are grateful for that. Old serials catalogues, indices, guides and the like are not pitched out but kept for library instruction in the special instructional room. Special items can be brought in easily and need not be removed from reference or circulation for more than a few minutes.

Since my time is limited, I must move along because the library has done far more for our program and for me than just to make us aware of basic research skills, important though that may be.

In an area like theatre, much is audio-visual. What does a Greek chorus sound like? How does the meaning in Shakespeare come through the iambic pentameter when spoken by a master actor? A Gielgud for instance. What was the stage set like in the Broadway production of Mr. Roberts? Who played with Henry Fonda in that show and what did they all look like?

We have a special catalogue for audio-visual items and students can check out plays and poetic selections on cassettes. Discs stay in the library. It's a rule. But, do you know what? Our library has been known to break that rule if there is no other way for a Greek chorus to be heard in a classroom across the campus. A student's report seems to be more important than a rule.

As to what sets and actors look like? We recently purchased, at my request, the New York Theatre Van Damm Photo Collection which covers all Broadway shows from 1919 to 1961. The collection is on microfiche. The photos are indexed by personality and by production so that one can study styles of drama, such as only expressionistic plays, or forms of drama, such as musicals or Shakespeare through the 26,000 photos which make up the collection. I complained that the only index was in the library and so the A-V library staff made a special index for us to keep in the theatre. That is a bit unusual, you must admit, and beyond the library's responsibility, but it is certainly a way to get more use from the collection. That is good thinking.

Perhaps one of the most unusual ways in which my students and I have used the library is in the preparation of slide-tape shows. The first was done by a graduate student who had done exhaustive research about women in the 19th century American theatre. She had found marvelous etchings and engravings and later, some photos. It seemed a shame for such material to disappear into the stacks once more. In cooperation with the audio-visual librarian, Dinah prepared a tape lecture illustrated by slides which the library made from the illustrations she had found. Dinah could not have afforded the costs of all these materials and the processing, but the library underwrote the cost in exchange for the slide-tape show after its initial use. Dinah has achieved immortality in the card file of audio-visual and the library has added a splendid program which has been used frequently by both theatre and women's studies groups. This is only one of the projects on which we have cooperated. Our people can gather the materials, and we have the expertise for narrating an exceptional tape and recording it well. The library provides the materials, the funds, and the climate to make such things possible.

In much the same vein as above, the library makes slides for use in my theatre history and introductory classes. Students need to see places and people as frequently as possible. I'm a lousy photographer but an avid traveler. I gather post cards of "sites of note" and portraits from national portrait galleries and my library copies them and processes them at cost for me. Were I to leave the slides in the library collection and simply borrow them for my classes, there would be no charge.

As you can see, the library is a very special resource. It is made up of lots of neat people looking for problems to solve--sometimes even before they are asked, as often as not. Recently, I received a three page set of instructions for finding plays located in the library. It is strung up outside my office so that students can read it and learn to be more self-sufficient. Since this piece was composed by the theatre specialist librarian, he might even have some wrinkles that the usual reference librarian might not be aware of, and he wanted our students to have the benefit of his techniques readily available.

Sometimes librarians just make good suggestions. I was looking for a likely topic for an article. The curator of the western history collection said that they had some stuff on Oscar Wilde's visit to Colorado. There was little in our file, but it got me started on a very profitable project which I'd have never considered without such a suggestion. Our rare books librarian sent me a bibliography of their holdings related to the theatre which I'm planning to dig into shortly. My guess is that she has done that with the other disciplines as well in order to draw attention to their collection. This kind of outreach goes on constantly at the University of Colorado. I only wish that the faculty would take advantage of all of the opportunities which are ready and waiting.

I recently recommended that there be a special library skills course taught for all incoming students to our campus. Not enough FTE came the answer. But just suppose that every department gave up one section of one course and that time were allocated to libraries to do even six sessions of basic research skills in all beginning courses. The quality of research papers would jump immeasurably. I can think of nothing which would do more for an undergraduate education, whatever the field of study. Could it be done? Can we afford not to do it?

Well, there you are. Sensible, flexible and creative--that is what I keep finding in my library. The old two weeks and two cents a day image has left us. The stereotypes are gone. My wife, who holds a BA in English and Speech and a MA in journalism, became a mother volunteer in her children's junior high school library. Later, she was asked to be the aide. She had such fun that she went back to school and became a full fledged librarian--not soon enough to solve my earlier described problems, though. She is so aware of the old image that she has been known to burn a dress when told it made her look like a librarian!

Just as things have changed for libraries, things have changed for me. Now, I'm struggling with a word processor, but I have my new library skills and my built in librarian which make things a lot easier.

For those of you who are not librarians, I have a word of advice. If you can't marry a librarian, take one to lunch and they'll tell you how much more you can get from your library than you ever imagined. Remember, "when in doubt, ask a librarian."

This paper was presented in a modified form at a conference on "A Colorado Response to the Information Society: THE CHANGING ACADEMIC LIBRARY," October 6-7, 1983, Denver, Colorado.

HOW THE LIBRARY HELPS ME AS A TEACHER AND RESEARCHER

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There are two starting-points for my comments on the topic before us: 1) My job is teaching texts, primarily literary texts. My research interests are also focused on how to read texts well. 2) I am concerned not only to do my job well but to get pleasure and stimulation from my teaching, research and writing.

My primary job is to get people to learn how to read texts well: to see what is there and what is not there; to frame questions which reveal the texts more fully; to learn how to answer the questions one has framed.

A great deal of my pleasure and satisfaction as a teacher comes from entertaining significant questions with students and colleagues. The more those questions come from others, or emerge as a result of the work we do together, the more pleasure and satisfaction I get, and the better the learning is. There are several intertwined pleasures here: the pleasure of conceiving of a significant or stimulating question, or approach, concerning a text; the pleasure of being part of a process which generates these questions; the pleasure of being part of a process which figures out how best to answer significant questions; the pleasure of doing a good job.

The satisfactions I get as a teacher are not very different from those I get as a researcher--being part of processes which frame good questions and figure out good ways to answer them.

The means to those ends in my teaching may, at first, lead me to discourage students from using the library--at least in the common ways of using a library, looking for "background" to explain a work or a critical introduction to help one understand. These are ways we typically use to distance our-

selves from a text or to cushion ourselves from the shock of contending with it. In freshman humanities, where we emphasize not only reading difficult texts without the aid of introductions or commentaries but also writing about the texts before they are discussed in class, we do not want the library used for "background" information.

Our strategy is hard for students to understand or accept. The student will say "I could do so much better a job discussing X if I had a little background" and "I could write a better paper if we discussed the book in class first." My only response is that, if I believe trial-and-error is good learning, I have to prefer the student's errors to the repetition of an expert's truth, and even more to the repetition of an expert's errors. Take your stand, I tell my students, even if that means rediscovering for yourself what generations of scholars have already known; for if you find it on your own, it is your own, and you are entitled to feel as good about your discovery as if it had never been known by anyone before. Please don't read the introductions!

Such teaching strategy works against common library usage, and initially there was even staff reluctance to do a library project in freshman humanities because, while it was a service for other college courses, it seemed irrelevant or harmful to ours. Over the years, we have struggled with ways to use the library for the ends of the humanities course and the ends of good research strategies in other college courses. My own judgment has always been that teaching students how to use the library is a crucial goal for a freshman humanities course, but doing so in ways which further the appropriate goals of that course requires a special strategy in itself.

For any paper I assign, from the first year to the senior course, I tell students I want them to answer three questions: 1) What do you know? 2) How do you know it? 3) So what? If I turn those questions into learning goals, they would be: Learn how to frame significant, interesting, productive questions; Learn how to answer such questions by learning how to assess evidence;

Simultaneously learn how to ask the significant question and how to find what kind of tools would enable one to answer it.

For the first library exercise in humanities, then, I find it useful to generate questions which arise from a text, which require making judgments about what would constitute evidence bearing on the question, which require making preliminary assessments of what the best authorities are on the question and, most important, saying why one would believe those authorities to be the best. Precisely because this is a first library exercise, the search and thought processes are far more important than getting what an expert would regard as the best answers. Here are some examples from recent library exercises involving Machiavelli's The Prince and W.E.B. DuBois' The Souls of Black Folk:

"Old Nick" as a name for the Devil is said to have originated in a reaction against the diabolical advice of Niccolo Machiavelli. Trace the earliest major published responses to The Prince, finding out the backgrounds of the writers, expecially their political views. Were these respondents simply shocked at the cynicism they saw in Machiavelli's writing, or did they have vested interests to protect by attacking Old Nick?

What is the history of the appearance of The Prince in English? Who translated, who published the first version? How was it received? What kinds of published responses did it generate in the first generation of its publication in English?

W.E.B. DuBois was a controversial man much of his life, but especially in his latter days when he announced himself a communist and finally repudiated his American citizenship. To write a balanced biography of such a man would be extremely difficult. Imagining yourself engaged in such a engaged in such a task:

1. survey the present biographical and autobiographical materails in print about DuBois;

2. evaluate those materials for completeness, especially as regards the period from 1950 on. Are there political slants, e.g. pro- or anti-communist, which characterize these writings? Is DuBois treated like a perfect saint, or a demon, in the biographical materials available for that period?

3. choose the best two works available on DuBois' life, basing your decision on book reviews, evaluations by scholars, and the like;

4. find out what you can about the publication of DuBois' papers. Where are they and under whose auspices are they being edited? How have any volumes which have been published been received?

One of DuBois's greatest adversaries was Booker T. Washington. The Souls of Black Folk gives an idea of DuBois' positions. Where would you go to find out what Booker T. Washington believed about the best ways for Black folk to prosper in America? What are his most significant writings? What works about him, including biography or autobiography, are most useful for presenting his views objectively or fairly?

DuBois writes of "the sorrow songs"--the Black spirituals. Pick out two favorite, well-known spirituals and find out what you can of their history. How old are they? Are they the creations of anonymous composers, or can their composers be identified? When did they first reach print, and under what circumstances? What are the two best studies or histories of the American Black spiritual?

We will be reading Aristotle's Nichomachean Ethics next term. For a library project I have framed a question which notes that people are fascinated by the picture of Alexander the Great being tutored by Aristotle and goes on to ask what the original sources are for information on that part of Aristotle's life, how dependable the sources are and how one would determine their

dependability. The question asks for a search strategy involving finding sources and reflecting on what the rules of evidence would let us say about them. It moves from lower order to higher order questioning and rests on developing a series of search strategies.

Last year we read Carlo Levi's account of being an inmate at Auschwitz. I asked one group of students to start their research from the fact that there were now people who denied that the killing of millions of people in concentration camps ever happened. "Imagine yourselves gathering evidence for a court case testing whether the things alleged to have happened at Auschwitz occurred. Survey what evidence is available. What kind of documentary evidence would you offer as most persuasive to a court, and why would you believe it to be most persuasive?"

This project led the group to consider first-person accounts by inmates, by kapos or trustys in the camp, by guards and other officials; it also led them to art-works, photographs and other artifact evidence, not just historical documents; and it led them to think about the numbers of independent accounts of an event it would take to persuade a court that Auschwitz happened.

I especially like this kind of assignment because it starts in such frustration. It makes one go back and ask how we know what everyone knows. If it is really the case that people are denying the fact of the Holocast, how can I possibly gather evidence to challenge so breath-taking a denial of fact? I like the assignment because it knocks the foundation out of all the working assumptions and because it can teach so powerful a lesson. E.G. Don't get mad, get the evidence. Wring ev ry possible bit of substantiated fact, every testable conclusion, out of the material. A simple-minded but accurate etymology for re-search is "look again."

Recently a group of students came to me to ask how they could persuade our Board of Trustees that the only appropriate stance to take with regard to investment in South Africa was divestment. They were full of information about the evils of apartheid and were frustrated that that did not overwhelm the

trustees with the rightness of divestment. I answered that I thought they were piling up evidence to point to the wrong conclusion. No one denied the evil of apartheid, but many trustees, following the Sullivan principles, were hoping to influence South Africa through the power of multi-national corporations, convinced that change in the work-place would have the greatest ripple effect. If you want to argue for divestment, I said, you must frame the right question. What is the evidence regarding change in the work-place? Do the Sullivan principles have any discernable effect? Is there any ripple from improvement in the work-place to other parts of the society? Frame the right question, then examine which tools will answer that question. Refine the question, refine the tools. Don't get mad, get the evidence. As might be imagined, some of my students were simply impatient with my advice, but others set to work using the library and the tools of economic and political analysis to check their own hypothesis--which is that "responsible investment" has no significant effect. They had to develop both a search strategy and reflectiveness about evidence.

In a number of advanced courses I want research papers. Often I want students to go from a familiar text to some extrinsic approach to it. What would a Jungian or Freudian reading of Wordsworth's theory of childhood and creativity in The Prelude be like? What are the political and religious ideas in the air when Dostoievsky writes The Devils? And does Dostoievsky absorb them or repudiate them? Who are the best authorities? What makes you think so?

In the course on the Novel, the final assignment is a research paper on one novel we are reading. I prepare for this assignment not only by the way we look at novels but also by a term-long lead-up to it. The Librarian prepares a brief list of resources for study of the novel and does a lecture on research strategies and materials; every week thereafter, each student must write two page-long typed annotations of essays, chapters or books on the novel as a form, the history of the novel, or on specific novels. At least one essay must be so annotated for each novel we read. The student submits these annotations in two copies; one I read and comment on; the other is put in a looseleaf

book, where copies of all papers also go, and this is kept on reserve in the library. I expect that each student will see what everyone else is doing, read the annotations and papers, and thus get ideas about how to go about research.

Each annotation must briefly precis the argument of the essay and then offer an assessment of it. The student must show that he or she has read something well and then taken some stand in relation to it.

When this assignment is most effective, it helps achieve several things: 1) as the term goes on, each student has more ideas to work with in reading novels; 2) sharing the assignments gives each student additional material to consider and evaluate; 3) each student is encouraged to study cooperatively with others; 4) each student goes into the research paper with a substantial amount of critical material already read and reflected on. Topics tend to be richer, the research fuller and more under the student's control. Even a last-minute piece of writing need not also be a last-minute piece of research; 5) with many students reading and annotating, they frequently turn up materials, or take a view of materials, which give me new resources or insights for my own reading. I keep the second copies of annotations, which means I now have a substantial number of annotations on major novels which I can share with students getting started on research on a new topic. I keep a number of past annotations in the notebook along with other materials for pump-priming. The course gets off to a smoother start with these materials available.

Obviously, if I were doing some particular piece of research on a novel, I could specifically request that students in the course help me in my survey of materials by annotating specific works. That is, this could easily and appropriately be adapted to the way some faculty use graduate students, and it could do so in a way educationally valuable to the student.

I must emphasize how much the quality of all the work in the novel course can be helped by this steady use of the library. The use of the reference collection to find what has been written and where it is; the use of the actual materials from the library collection; in some cases the uses of more elaborate

information-retrieval methods to find and borrow materials not in our library--all this helps raise the level of discourse on the novels we are reading and the level of student writing on those novels. We get to higher-order questions more quickly. I also want to underline the value of the library in reinforcing a style of learning which emphasizes cooperation rather than competition. The only thing I keep on reserve in the library is that looseleaf notebook in which students place their work week by week. In this course, the library is as important as the classroom.

Usually, as a way of checking how all this is working, and to help students be more reflective about what they are doing, I ask, after mid-term, that each student do a one-page description of his or her typical search strategy for finding works to annotate. As might be guessed, some students are magnificently imaginative in their approaches and a few, despite all the library instruction in course after course and despite anything I do in this course, say "Oh, I look in the card catalog under the author's name and almost always find something." And of course what drives me wild at that point is realizing that such an approach almost always has enough success to confirm the lazy student in it.

To recapitulate my goals for use of the library in teaching: I want to teach search strategies for framing and answering significant questions. I want students to learn how to assess and evaluate material. We have all gotten the kind of paper which examines the literature on a topic, ranges the extreme views against one another, and concludes that the truth lies somewhere in between the extremes. I hope to use the library in such a way that students do not always conclude that the truth lies somewhere between but assess the evidence with hard-headed sophistication. I want students to learn how to use the whole library, not simply the familiar materials. I want them to be inventive in conceiving ways to answer their questions, rather than dodging a question or concluding that it is unanswerable because they have never used that kind of material before. I want them to be comfortable with <u>methods</u> of information re-

trieval as much as with the material they handle.

What I ask of my students is what I generally need for my own writing and research projects. In the near future, however, I am going to be working on arranging and cataloging the papers of an important writer. I have used many such collections, I have read how scholars prepared editions, I have used descriptive bibliographies and the like. I have been interested in how the scholars solved their particular problems and grateful for the collections and editions, but now I will have to begin doing what I have been able to take for granted as having been done, in the past. I am on the verge of a new use of libraries--producing information to be retrieved--and I find myself excited by what I have to learn and by what it might let me give my students.

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USING THE LIBRARY TO TEACH HISTORY AT THE UNITED STATES AIR FORCE ACADEMY

by Colonel Carl W. Reddel
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The occasional opportunity to speak to non-military audiences about one facet or another of the United States Air Force Academy serves as a reminder of how deeply rooted the Academy is in the values and traditions of American society, especially the freedom of information so widely assumed and so superficially appreciated by American citizens. Our students at the Academy are like most other young Americans in assuming that relatively easy and unhindered access to information is a natural condition. Generally lacking knowledge and experience concerning societies that treat information as a privileged commodity to be made available at the discretion of governing elites, they fail to see the full potential of the information available to them and generally are not inclined to learn the techniques necessary to exploit it for personal or professional gain. Consequently, a significant purpose of our undergraduate curriculum is to develop both a positive appreciation for the abundant information available to our students, as American citizens, and the skills necessary for its successful use, as future military officers. These purposes are embedded in a larger, multifaceted program of education and military training.

The Air Force has been committed to a number of goals since it opened its doors to the first graduating class of 1959. Most significantly, it has sought to provide the nation with military officers broadly educated in the arts and sciences.[1] Within this broad commitment, one of its major purposes is to develop the most effective program of undergraduate education it possibly can. This dedication to effective undergraduate teaching underlies my personal view of the Academy Library as both a potential and actual resource.[2] From the more specialized viewpoint of the Department of History, our library supports three broad areas of activity: day-to-day teaching, where the library is truly an adjunct laboratory for our classroom work, as well as being a work place in its own right; student research projects, which are directly tied to the purposes of teaching history to undergraduates; and faculty development, which leads both to more effective teaching and to the professional military development of the officers serving on our faculty. The latter is a special challenge for our library because of the faculty's high turnover.[3]

The Academy's curriculum has three courses in history required of all students as part of the core curriculum; it also provides the opportunity to pursue a major in history.[4] Our history program is clearly pointed towards a number of goals which render the library an essential element in making the program work. One of the program's major goals is to develop and to enhance student abilities to use sources of both information and data,[5] a goal which is achieved in a very broad sense in our three required courses and which is much more specialized and refined in the case of the history majors. In any event, all history courses are to a greater or lesser degree concerned with learning about the past and with mastering the modes and

methods of historical inquiry. Students must learn to seek and to locate historical data, to discriminate among competing, contrasting, and often conflicting sources of information, and to choose successfully the data, the information and the interpretations consistent with the demands for objectivity within the historical discipline.

We have appro imately 2,000 students enrolled in history courses each semester, and the department's thirty-three instructors could not begin to accomplish the task I just described without the support and assistance of our librarians.[6] In our history core courses we expect the general familiarization with library resources and tools to come from the library staff, as our students seek information to accomplish essays on assigned topics. We have experimented with various presentations on library research techniques for our freshmen students in their first college-level course in history, but we have no formula or technique which has proven fully satisfactory. In the more specialized courses required of the history major, the link between the history instructor, the student, and the library staff and resources, becomes more explicit and developed.

For example, we have a course in historical methods required of all history majors. This course has regular and frequent meetings in the library, where the students are directly involved in exercises which demonstrate how libraries store and organize historical information and how the library provides the tools to identify and to locate this information. In this regard, we are especially fortunate in our historical program because in addition to the printed sources normally found in a library, we have a special collections branch which possesses both institutional and Air Force archival materials, and a specialized historical collection on the history of flight, both of which are made available for student use by a professional archivist working in close coordination with our instructors.[7] Therefore, our historical methods course, with about sixty students a year, truly uses our library as a laboratory, providing the opportunity to use primary documents from the history of the Academy itself, from the personal papers of figures important in Air Force history, and from other unusual sources concerning the general history of flight.[8] In turn, this work in primary documents is supported by the library's general collection. This past academic year, a visiting civilian professor from the University of Wisconsin taught a course in American military biography which required student use of personal papers of key figures in history of the Air Force.[9] Equally fortunate is the fact that our command historian has her office in the same special collections area and is available to both faculty and students as they conduct research. As a result, our students not only have primary sources and specialized secondary materials readily available, including original manuscripts and microfilm copies of other manuscript collection, but they also have the assistance of practicing professionals working in the same areas where they work, truly making our library an educational resources center.

In some of our upper division offerings, we familiarize cadets who specialize in the history of various regions of the world with how a specialist in that area approaches informational problems and carries on research by looking at library resources through the eyes of that specialist. Apart from specific, individual help on research projects, the instructor conducts a tour of the library, usually planned with the librarian specializing in that area. For example, the students in the course on the history of Russia and the Soviet Union become directly familiar with both Russian and English language encyclopedias, dictionaries, bibliographies, indicies, journals, magazines, newspapers, and other specialized sources on Russia and the Soviet Union. The tour ends with a presentation by the government documents librarian on the scope, range, and type of information which appears in United States government publications on the Soviet Union. This latter effort is especially helpful to our students, because as future military officers they may use government publications in their work. Our librarians also assist in independent study projects in a given area. For example, in one case the government documents librarian directly guided a student's independent research project resulting in a bibliography of government documents on the Soviet military, an example of a specialized consumer working to develop particular skills and knowledge consistent with a program of professional development. In this case the instructor helped the student pose and organize the research problem; the government documents librarian played the key role in demonstrating how to solve the problem through identification and location of the appropriate information in government repositories.

A typical response from students in one of these upper division courses, following completion of the specialist's tour, is "Why did we have to wait until now to find out about these things?"--a response which suggests the student is at the right level of intellectual maturation to be usefully exposed to specialized materials and the techniques for their use. One of the spin-off benefits in this activity is that both the reference librarian and the library's subject area specialist receive a direct appreciation of the level of discourse and intellectual inquiry at which our students work on a given subject, as well as an understanding of the types of materials a faculty specialist believes are important for student projects. It also provides students with a very concrete appreciation of the types of materials they are expected to consult in their research.

Our library staff is equally concerned with the professional development of our faculty. The majority of our 574 faculty members leave the Academy after four years and as military officers return to non-teaching assignments. As a result of their tour at the Academy, the officers resume their military duties with an enhanced understanding of their academic speciality, usually having improved their professional academic credentials as a result of teaching, research, and participation in the activities of the professional societies in their particular field. The officers arrive at the Academy with at least a master's degree in their specific discipline, sometimes with dissertations in progress, and occasionally with earned doctorates. Many of them have research projects in progress, looking

towards the publication of books and articles, or the delivery of papers before their respective professional associations or societies.[10] In conjunction with this effort, many are also working on research projects associated with their professional military education, projects involving research in either correspondence courses, or seminars, conducted at the Academy in association with military staff colleges. These research projects are normally on military topics and require the support of specialized information and data, which the library provides. With the continual arrival of new faculty members carrying on research in both their academic disciplines and professional military development programs, our librarians are constantly educating new members of the faculty concerning the library's holdings and the procedures for their effective use.

This brief paper began with reference to the central position of freedom of information in American political culture, a resource generally assumed and largely unappreciated by American citizenry in general and our young students in particular. My own appreciation of the unique nature of the public availability of information in the United States developed slowly and experimentally, but was first crystallized for me by a Frenchman, Jean-Franscois Revel, when he wrote about the peculiar nature of the United States in Without Marx or Jesus, the New American Revolution Has Begun. He emphasized both the uniqueness of the American public library system and the "information revolution" occurring in the United States.[11] This extraordinary availability of information to American citizens was strikingly reemphasized to me in 1975, when after long bureaucratic delay I waited with mature Soviet scholars outside the central dissertation library in Moscow, to use dissertations which in their American equivalent are nationally available in the United States to the most immature undergraduate.[12] Helping our students realize the potential for personal and professional growth which resides in information may be one of our first tasks as instructors of history at the Academy, when we teach students to use the library on historical subjects. In and of itself, this is an important lesson in the special nature of American history, that our students live at a time when their country in particular has given them unparalleled access to an abundance of information never before possible in human history.[13]

The future for the Academy's students appears replete with increasing challenges as the technology and the techniques for accumulating and manipulating information grow at bewildering speed. It is estimated that the Academy will have microcomputers available for the use of all of its students and faculty by July 1987. Especially notable in this effort will be the eventual networking of all the computer resources of the Academy, including the library, thereby providing an unparalled access to information. In keeping with the tradition of technological advancement in American society, the machines are available in advance of the theory and doctrine for their use. Informed speculation, such as that by Harlan Cleveland on "Information As A Resource" is relatively recent.[14] More importantly, perhaps, from the viewpoint of teaching undergraduates, is the fact that it is not yet clear how this expanded information capability will

enhance education and learning in the humanities, but clearly our students will be learning new languages. It has been traditionally part of the disciplinary challenge for the professional historian to learn the language of a new subject, whether it be that language necessary to understand another country's history or the jargon-laden erudition of the most recent discoveries of his social science colleagues; therefore, we as historians will also need to learn the new language(s) used by our students. That, however, is a matter of technique and form.

The essential substantive challenge will be to minimize the gap which already exists between data and information on the one hand, and wisdom on the other, or at least to restrain the growth of this gap. Perhaps that is the special challenge for the humanities throughout undergraduate education in the emerging, computer-based, post-industrial society that is the United States. Certainly, it is not a special concern or goal of those disciplines characterizing themselves as sciences that wisdom should be the result of general education, although the Academy is exceptional in American undergraduate education in the strength of its institutional commitment to general education as expressed in its core curriculum.[15] Years ago, Philip Wylie stated the existence of this gap in the provocative form typical of his style: "modern man is relatively the most ignorant of his species ever to exist" (Wylie's underlining). He continued, "Compared to what some men know to be true, that is, nearly all men are far more ignorant than their ancestors who, till recently, had a general and proportionately larger grasp of the then-known."[16]

The data and information base will grow and expand in an age of continuing specialization, even as we learn better to exploit existing library resources in the teaching of history. Perhaps those teaching in the humanities should judge computer applications in education with a special touchstone, the need to maintain a link between information and wisdom and to challenge those applications which fail to contribute to that purpose. Tenuous as the historical relationship has always been between information and wisdom, the prospect of an increasing, mindlessly accepted gap between the two is not comforting. But special challenges sometimes elicit extraordinary repsonses, and it may be that this is the particular challenge which will revivify the languishing humanities.

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FOOTNOTES

[1]President Dwight D. Eisenhower signed the Air Force Academy Act on 1 April 1954, and the first class graduated from the Academy in 1959. The Academy's mission is to provide instruction and experience to all cadets so that they graduate with the knowledge and character essential to leadership and the motivation to become career officers in the United States Air Force.

[2]The Academy Library subscribes to approximately 2200 periodicals and maintains about 275,000 book titles in a collection of over 350,000 volumes.

[3]Most officers are assigned to the faculty for a period of four years. Congress has authorized tenure positions for thirteen percent of the faculty. Except for the twenty-one permanent professors who are normally heads of academic departments, the remaining tenure positions are four year renewable appointments to either tenure professor or tenure associate professor.

[4]The three required courses are the following: History 101, "Modern World History"; History 202, "Modern Warfare and Society"; History 303, "The United States in a Changing World: Critical Issues." According to the Air Force Academy Catalog, 1983-84, p. 46: "Academic majors are available to all cadets who choose to major in a subject area. The total major requirements for graduation are 37 core courses plus nine major courses (total 46), for a divisional major the faculty is organized divisionally into Basic Science, Engineering, Humanities and Social Sciences or 11 major courses (total 48) for a disciplinary or an interdisciplinary major. Cadets who do not desire to major in one subject may choose the basic academic program, a non-major, constructed of the core plus eight electives that total 45 academic courses." The Academy sustained its core curriculum during the late 1960s and early 1970s, when a number of colleges and universities chose to dismantle or seriously to dilute their core curriculum.

[5]A useful view of the distinction between data, information, and knowledge, and the role of libraries in the information process, first came to my attention in a published interview with Kenneth Dowlin, Director of the Pikes Peak Library ("Libraries Face Decision on Their Future Roles," Gazette Telegraph, Colorado Springs, 25 July 1983). Mr. Dowlin's forthcoming book, The Electronic Library: The Promise and the Process (New York: Neil-Scherman), will address this subject in greater detail.

[6]During academic year 1983-84, the department had thirty-three instructors, including one visiting civilian professor, one Royal Air Force officer from the United Kingdom, and one U.S. Army officer. The fifty-one member library staff consists of three military personnel (two commissioned officers and one non-commissioned officer) and forty-eight full time civilians of whom fifteen are professional librarians.

[7]The Gimbel Library, one of the world's finest collections on ballooning and early flight, is maintained separately within the Academy Library. Established in 1971, the collection consists of more than 20,000 items, including 7,000 books and 5,000 prints. The collection is fully catalogued and, with the assistance of unpublished finding aids, is open to use by visiting scholars and students.

[8]The library maintains a close working relationship with the Air Force Historical Research Center, Maxwell AFB, Alabama, the primary archival and historical repository of the United States Air Force. This relationship renders virtually every subject in the history of the Air Force accessible to students and faculty for their research.

[9]Professor Edward M. Coffman of the University of Wisconsin (Madison) was a Distinguished Visiting Professor in History during 1982-83, a one year appointment. At any given time, about six civilians hold these appointments on our faculty.

[10]The Academy publishes an annual, fiscal year listing of faculty publications and presentations. The most recent publication contains the following statement: "Although an undergraduate institution, the United States Air Force Academy has a very vigorous research program that encompasses a variety of disciplines and is very applications-oriented. During Fiscal Year 1980 the faculty gave 195 presentations and published 119 articles in journals and magazines. During that time the faculty produced 52 research reports and dissertations, 23 books, and one movie." (Discovery: Faculty Publications and Presentations, Fiscal Year 1982, U.S. Air Force Academy, Colorado Springs, Colorado, n.d., p. 6).

[11]Garden City, New York: Doubleday & Company, Inc., 1971, pp. 33-36 on public libraries and all of Chapter 13 on "The Information Revolution." The book was originally published as Ni Marx, Ni Jesus, Editions Robert Laffont, S. A., 1970.

[12]In 1975, the author participated in the Young Faculty Exchange (International Research and Exchanges Board) with the U.S.S.R., living at Moscow State University and researching in libraries and archives throughout Moscow and in Leningrad.

[13]I fully realize that access to data and the possession of information does not necessarily result in wisdom, a point made by Harlan Cleveland in the article cited below.

[14]The Futurist, Vol. XVI, No. 6 (December 1982), pp. 34-39.

[15]At the Academy, three of the four academic divisions characterize themselves as sciences: the basic, engineering and social sciences.

[16]The Magic Animal (New York: Doubleday, 1968), p. xiii.